Norcold 2118 Gas / Electric Cooling Unit



RV Cooling Unit Warehouse

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Tools needed to do the install:

Screw gun 5/16 ¼ Phillips wrench putty knife knife caulk gun zip ties





1 or 2





And enough time to think things thru at times, so don't give up and hang in there to the end it will be all worth it. A cold fridge is about to be had!!







Please read through these notes before starting:

- Throughout this manual, there will times when you see (RA), (YA), or (BA). These are referring to red arrow, yellow arrow, and blue arrow. We use these to point to a certain spot or part in the pictures.
- There are some differences between this install manual and DIY install videos on YouTube. So, to avoid confusion, follow **only** the instructions in this manual.
- It a good idea to know where your fridge 12V DC fuse is located just in case you need to get to it in this process.
- Before you take any wires apart its always a great idea to take pics of how they were. That makes it nice to look back in case something is not quite clear.
- This unit comes with its own LP burner and heating elements which are designed for this unit, **do not ever** use the original burner or heaters on our unit.
- **The most important steps you do not want to get wrong is the thermal mastic, foam, slideout venting and vent fan application**
- **If your fridge has an icemaker make sure to take pics how this is wired, these normally do not have them so we do not show the hook up as its really completely separate from the rest of this install anyway.**

To start this process, begin by taking the cooling unit out of the box, if box appears to be damaged don't panic as we foam package them into the box and so the box can be beat up a bit and the unit is still not damaged. So, when you take the box apart you will notice a spray foam packing inside and so this needs to be removed and then the unit will slide out. Inside the box you should have the cooling unit, and parts needed to do the install.



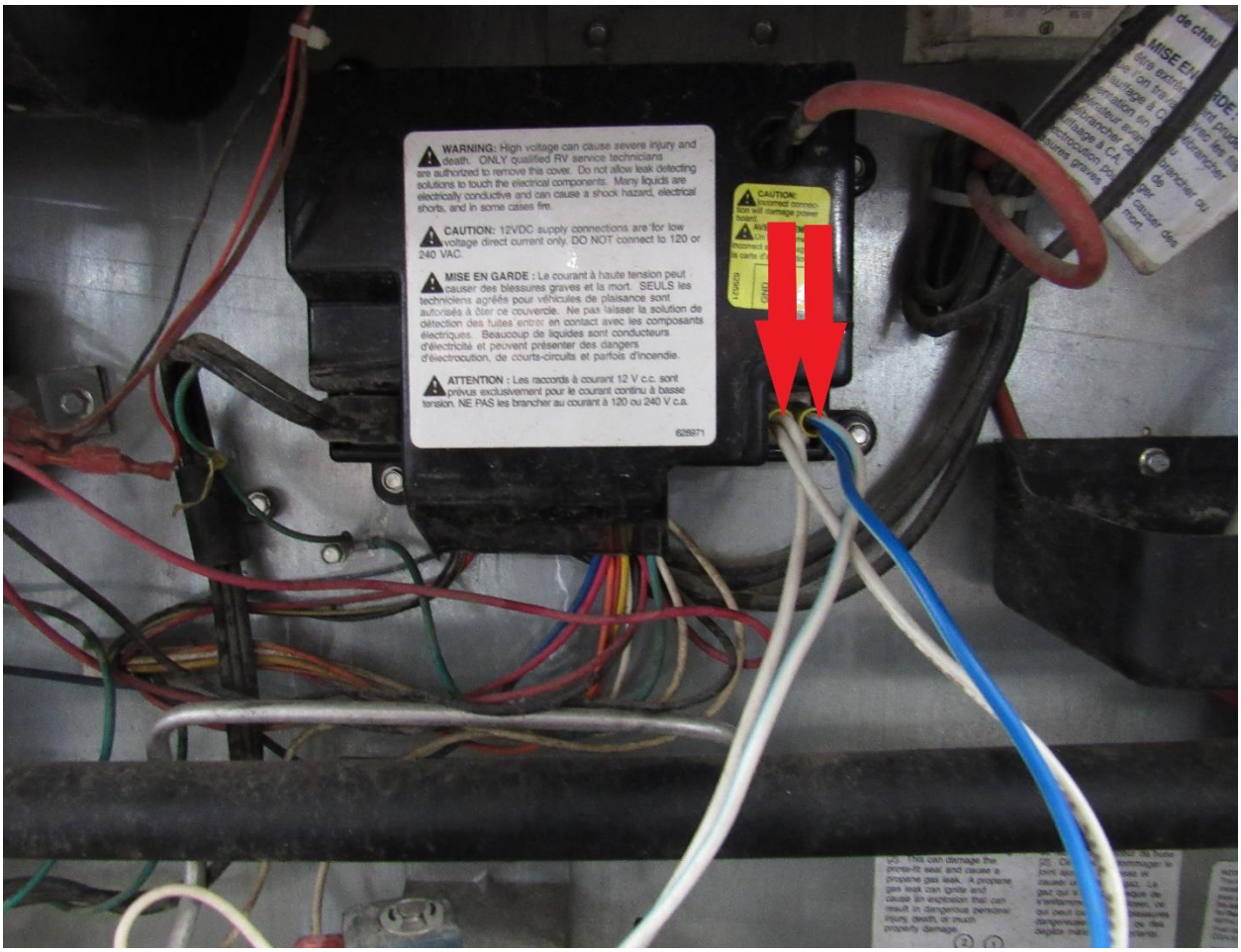
Cover up your floor with blankets and removing any door handles or smoke alarms that might hinder the exit of your refrigerator from your cabinet. Turn off the water pump (if you have an ice maker in your fridge) and the refrigerator control panel.

WARNING:

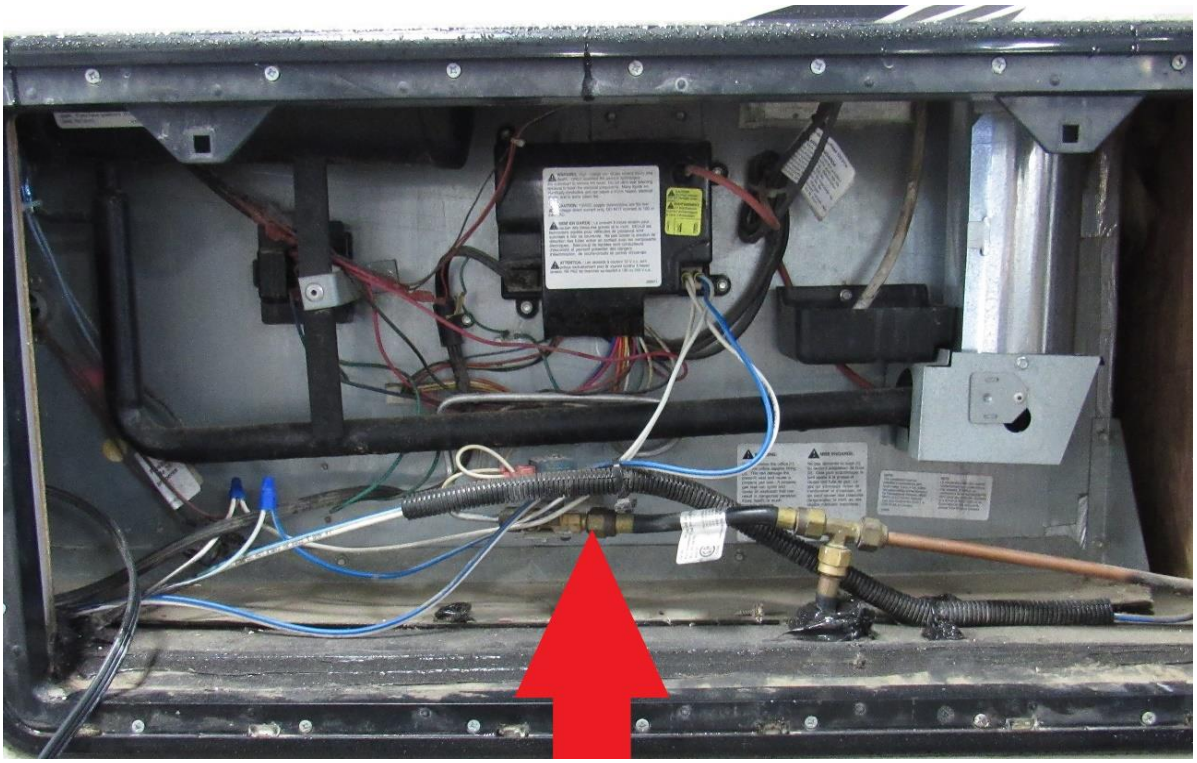
Make sure to turn off LP gas at the tank before starting the install.



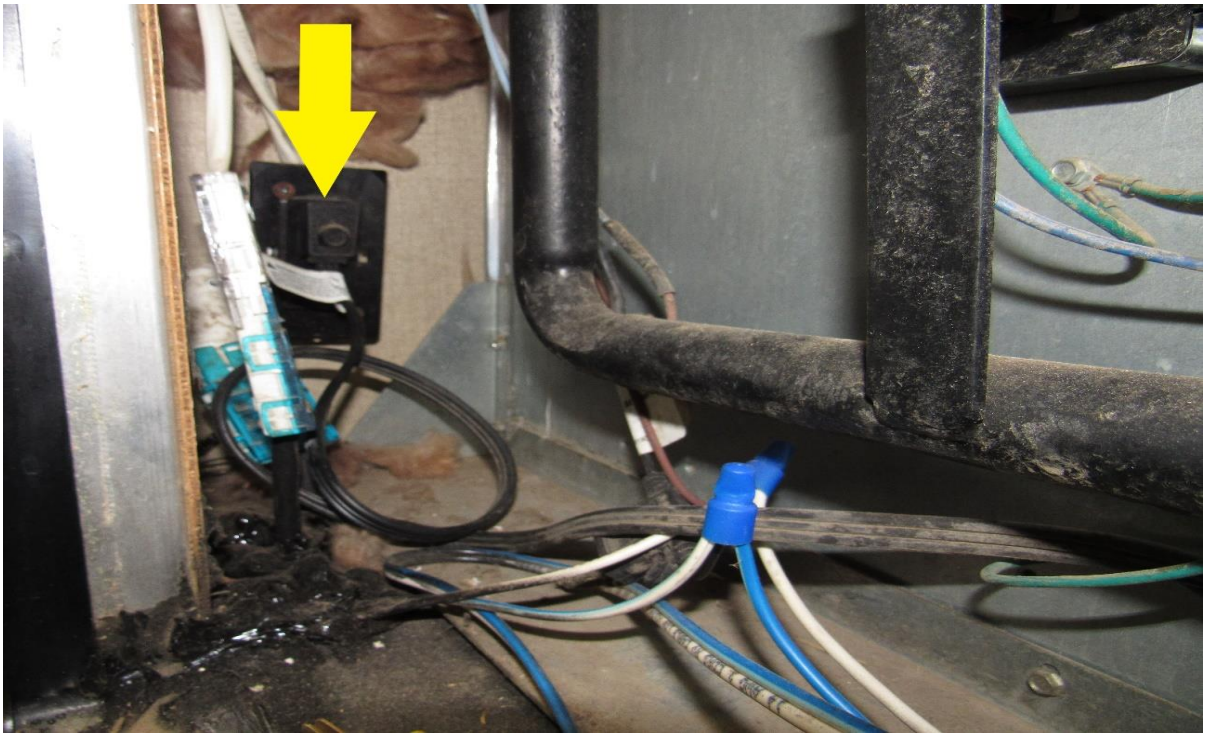
Locate the side vent for the refrigerator on the outside of your RV. Take the 12V wires loose from the board (RA). If wire ends are not insulated, wrap the ends with electrical tape so you don't blow the fuse. But make sure to mark the one that is 12V positive, so you don't hook them up wrong later.



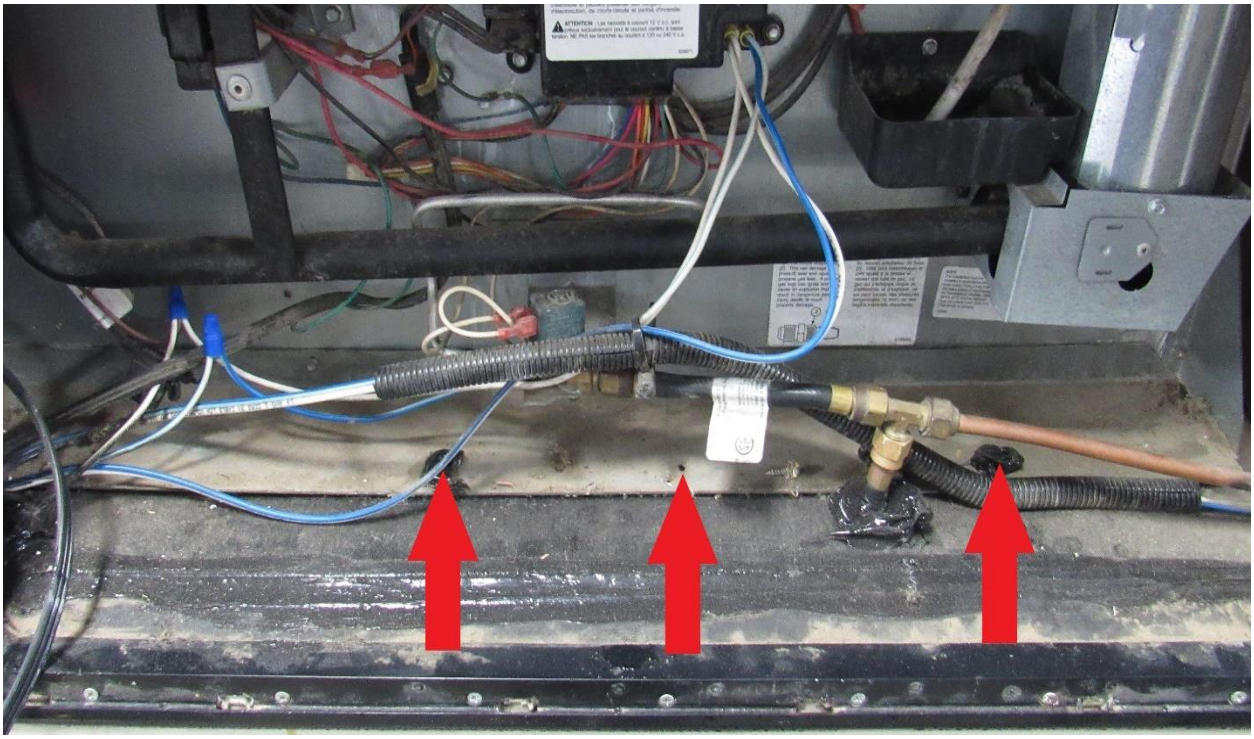
Take your LP gas line off (RA).



Remove the 120v plug from your wall outlet (YA).



There are many different styles out there but most have at least 3 mounting screws (RA) through the back plate holding the fridge to your RV floor. Screw size and bit needed will vary from coach to coach.



Going inside your RV, start by removing the black trim covers on the top and bottom (RA) of fridge.





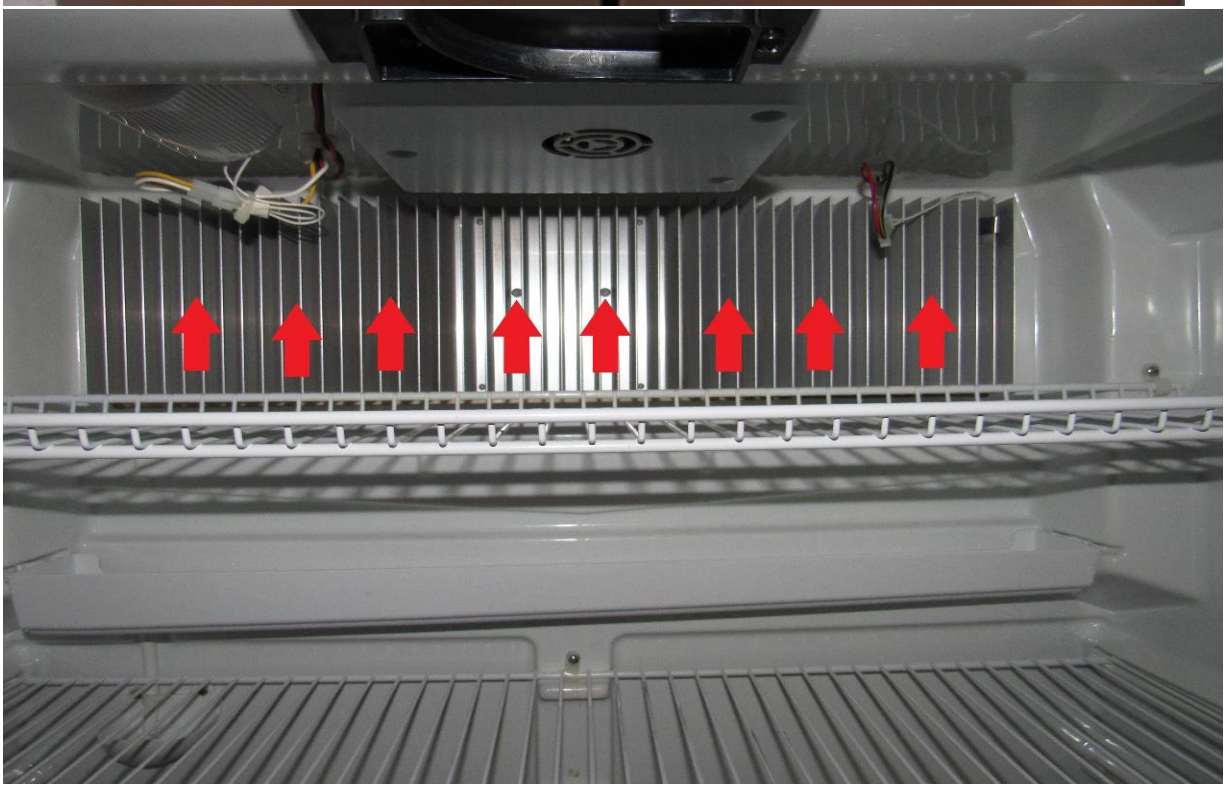
Remove the 4 mounting screws on the top and bottom (RA).





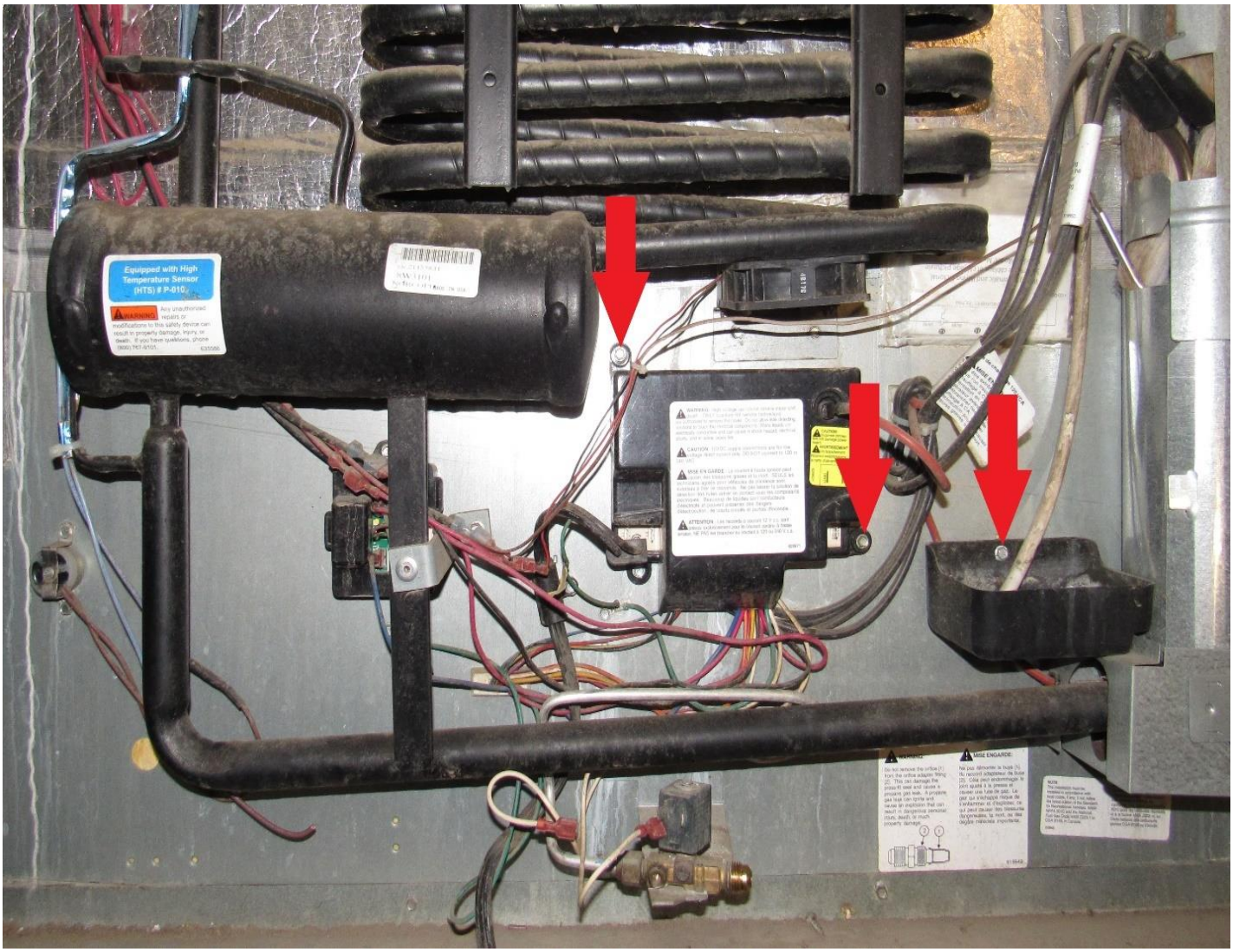
Remove the mounting screws from the freezer and refrigerator (RA) with a 5/16” hex bit. The thermistor will have to be unclipped from the fin, as the fin will drop away from the box once loose from the unit.



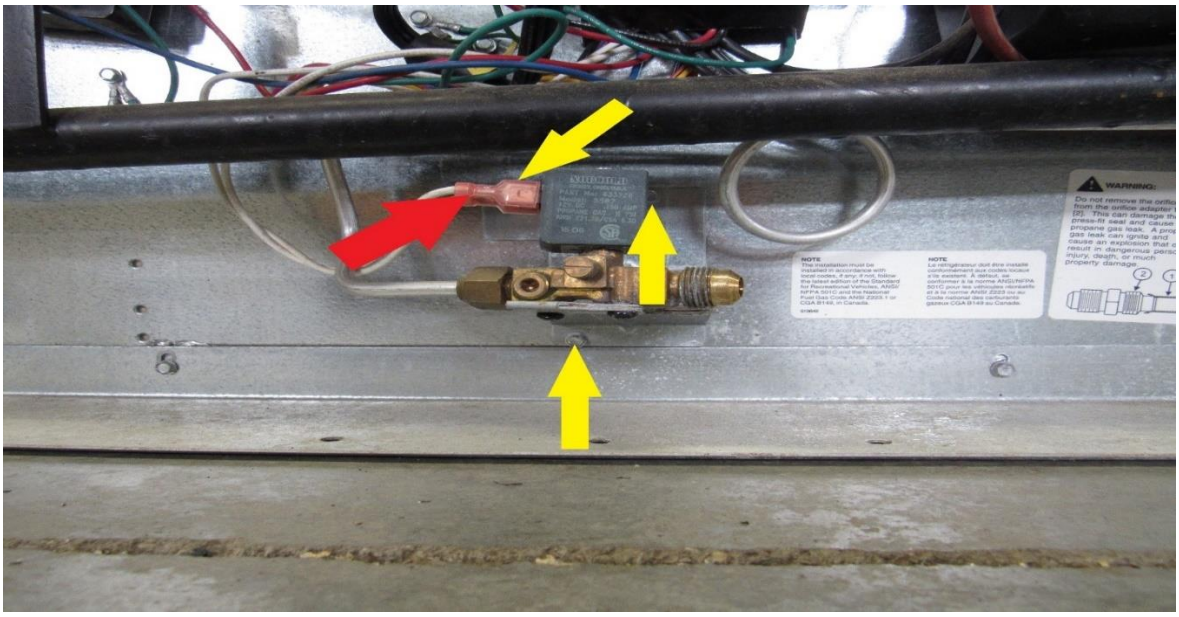


We do not show the fridge being slid out onto the floor, as the lay out of the coaches vary greatly and so it could be misleading to your scenario. But the object is to have 1 guy on each side of the fridge and as your fridge starts to exit lift up gently so when the rear end of the fridge fully exits the cavity that it does not drop, but needs to be gently and carefully set on the floor and pushed or carried to your open floor area. Lay fridge face down on the floor, making sure doors are latched shut so they don't swing open and we normally put a pile of blankets on the floor by the top freezer door so the fridge is lying face down at an angle. Doors can be removed if this helps on your end, it prevents damage to the doors and helps with weight load.

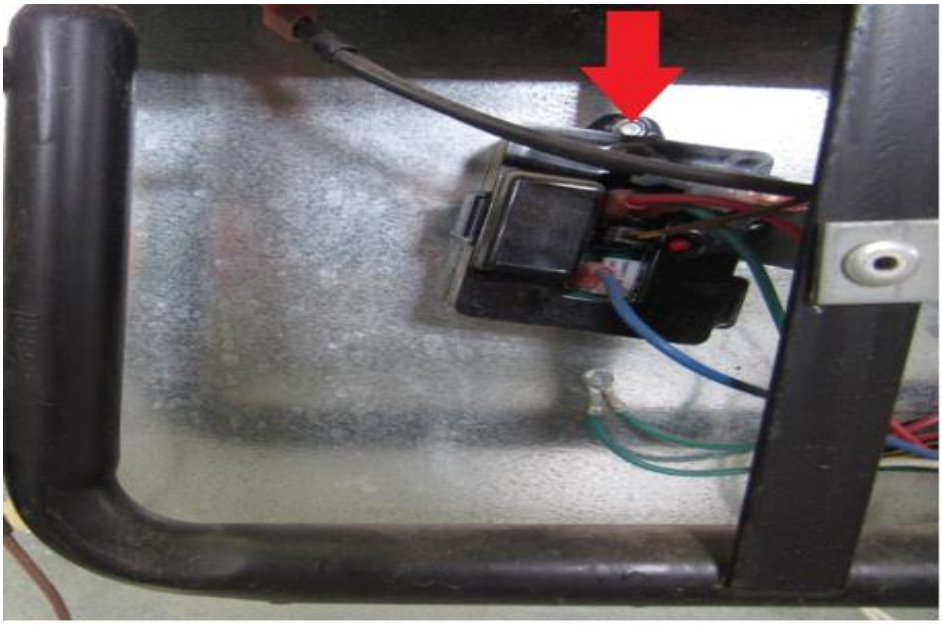
Remove ¼" mounting screws (RA) on board and defrost cup.



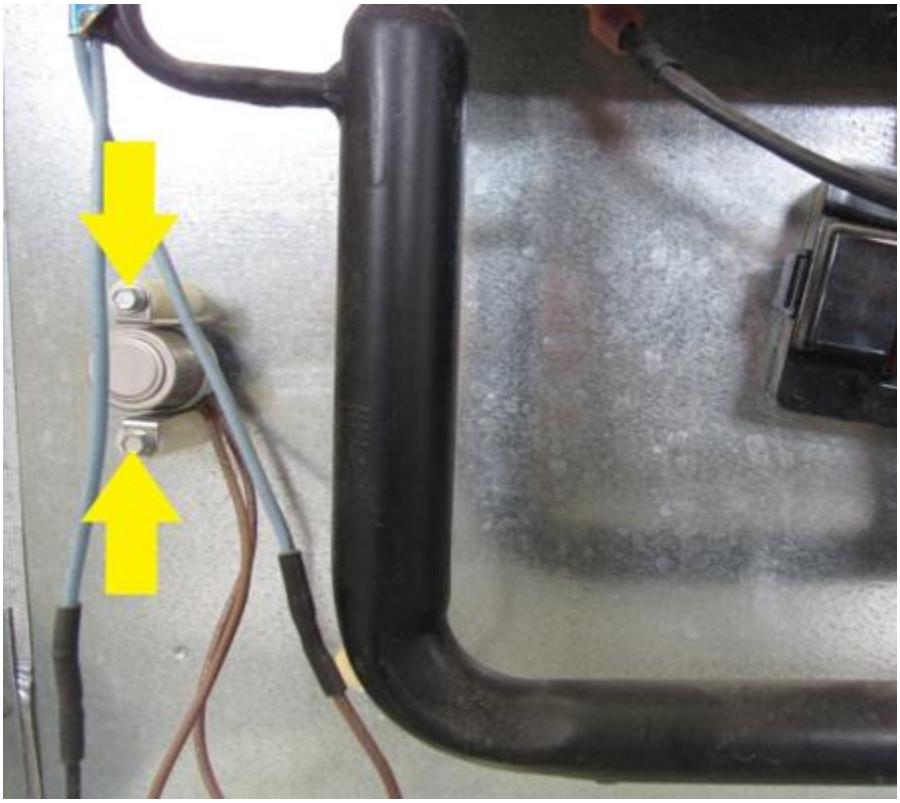
Remove the 2 white LP gas solenoid wires (RA) and the 3 - ¼" hex head (YA) mounting screws.



Remove the red wire from the safety recall kit (RA) this recall kit can be reattached to the new cooling unit or left off, we leave this up to you, it's a kit Norcold designed for their unit and will still work on our new unit but we do not require it or show how to install it as these can vary from one to the next. If you do want a safety device, you have 3 options, #1 the original device shown here #2 a Halon Fire extinguisher w/h a solder fuse #3 ARP fridge defend. We do not sell any of these 3 but just a suggestion and whatever you use has to be installed and worked with the manufacture of the product.



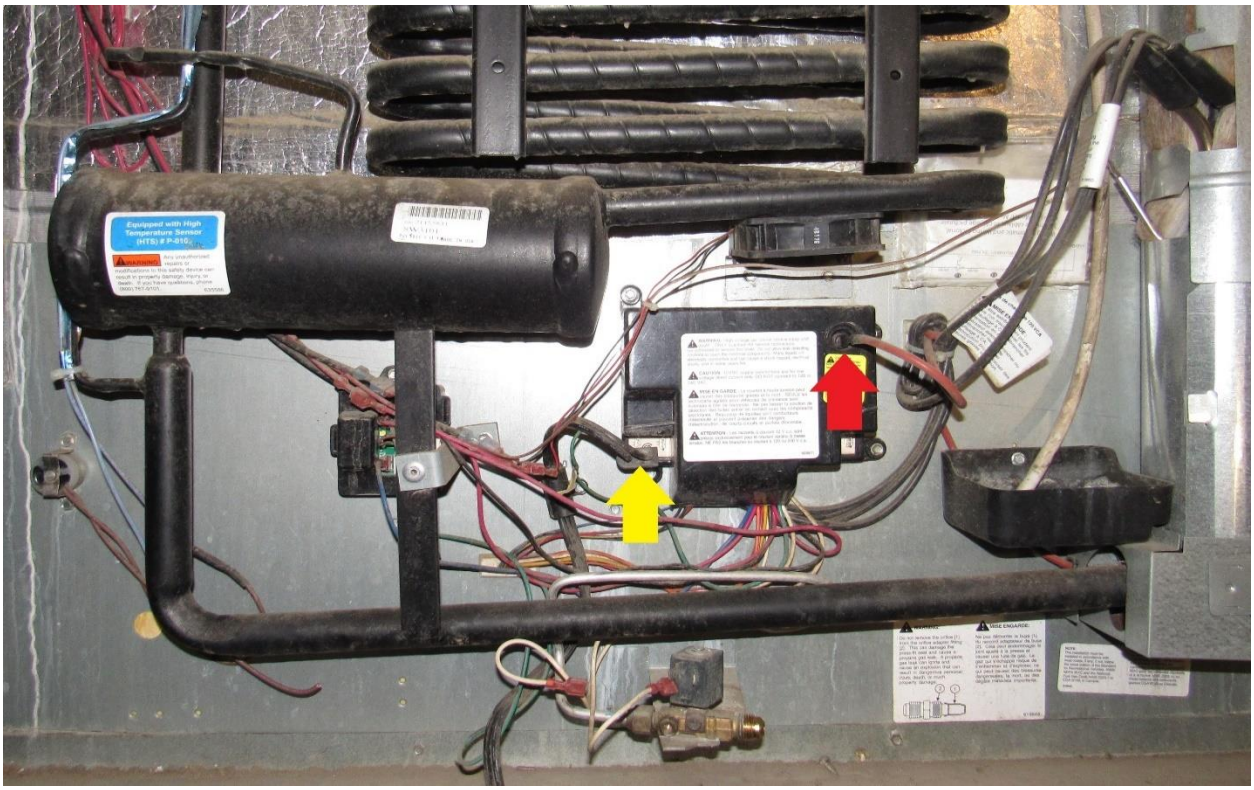
Remove the Low Ambient temperature kit (YA) again this can be left off or put back on, its only needed if you are in below 0F amb temps.



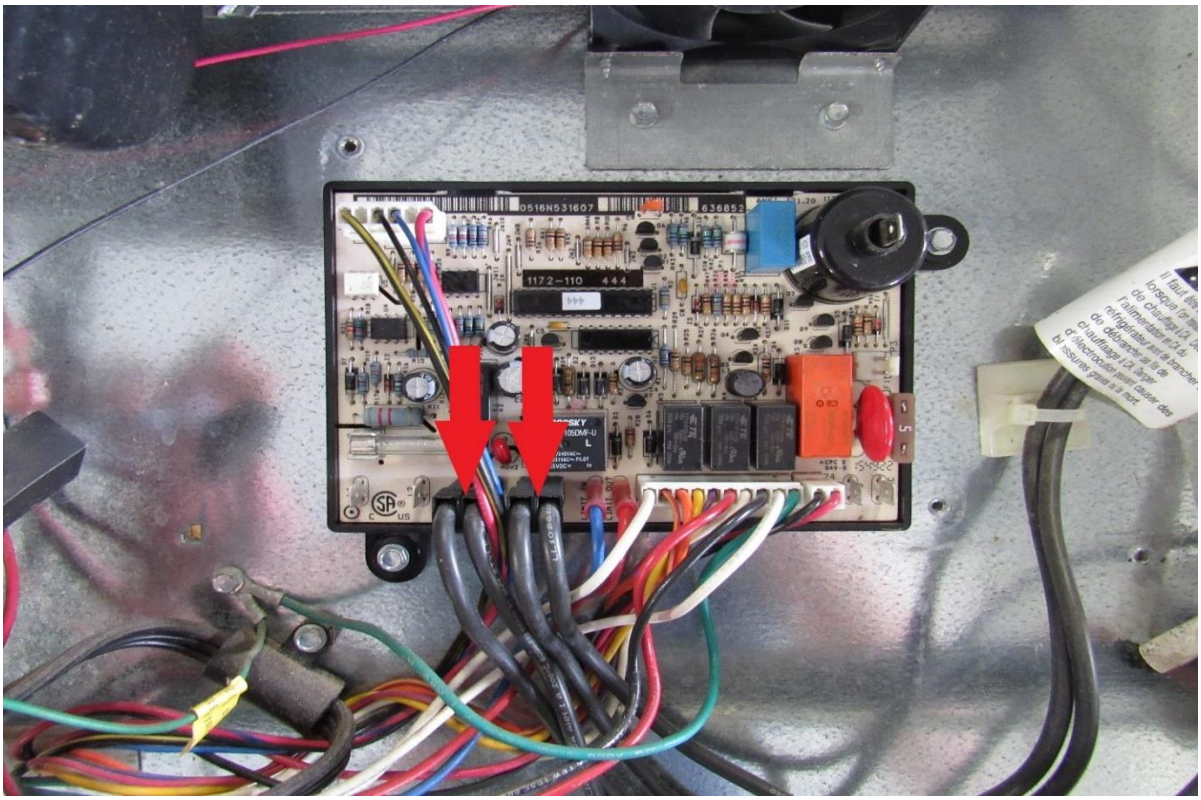
If you do decide to add this to the new unit our unit has 2 lines instead of one so it just needs to be wrapped around both lines the best you can and zipped tied to the 2 lines. (RA)



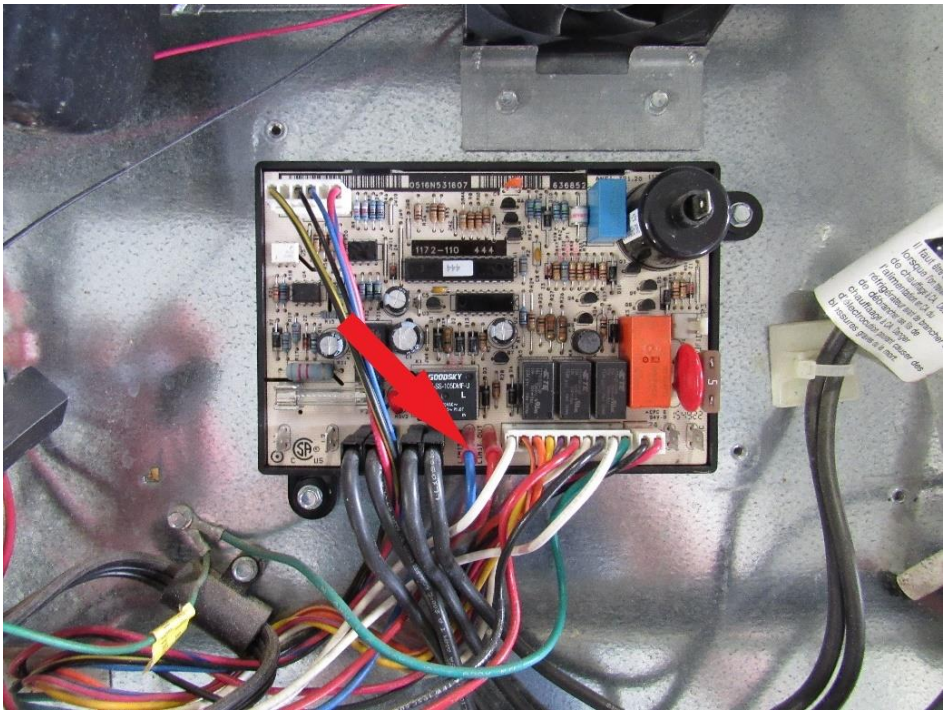
Remove igniter (RA) and the 120v black plug (YA).



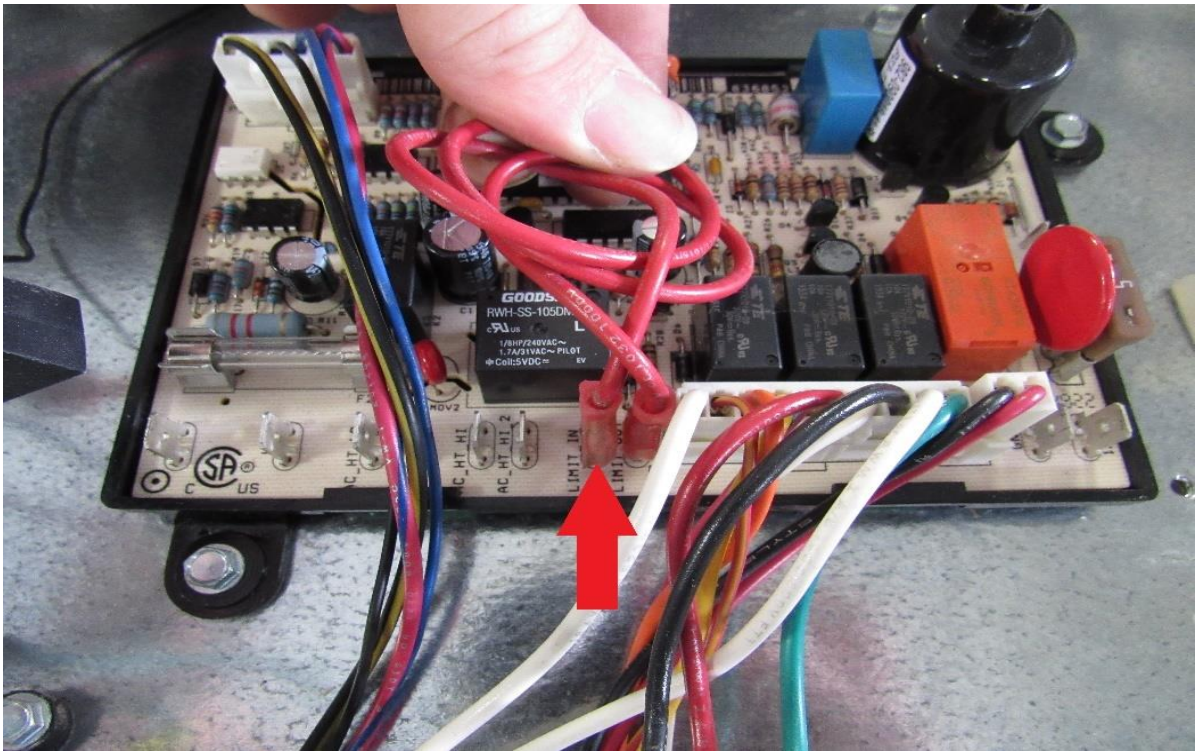
Take off board cover and disconnect 4 black heating element wires (RA).



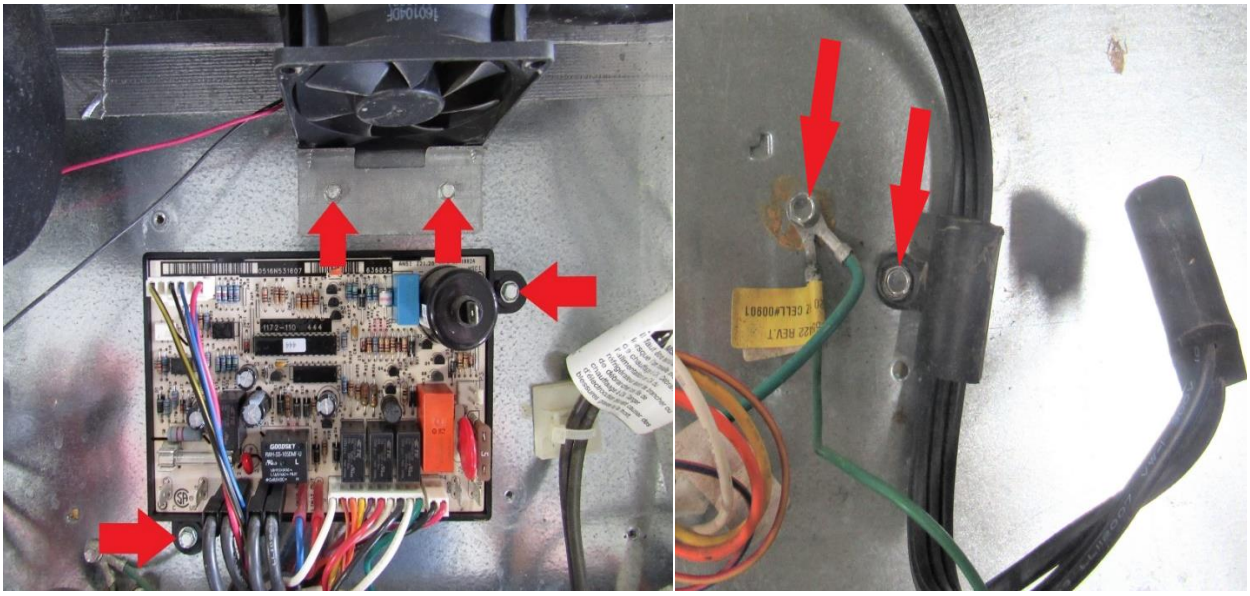
Take blue wire (RA) loose from board



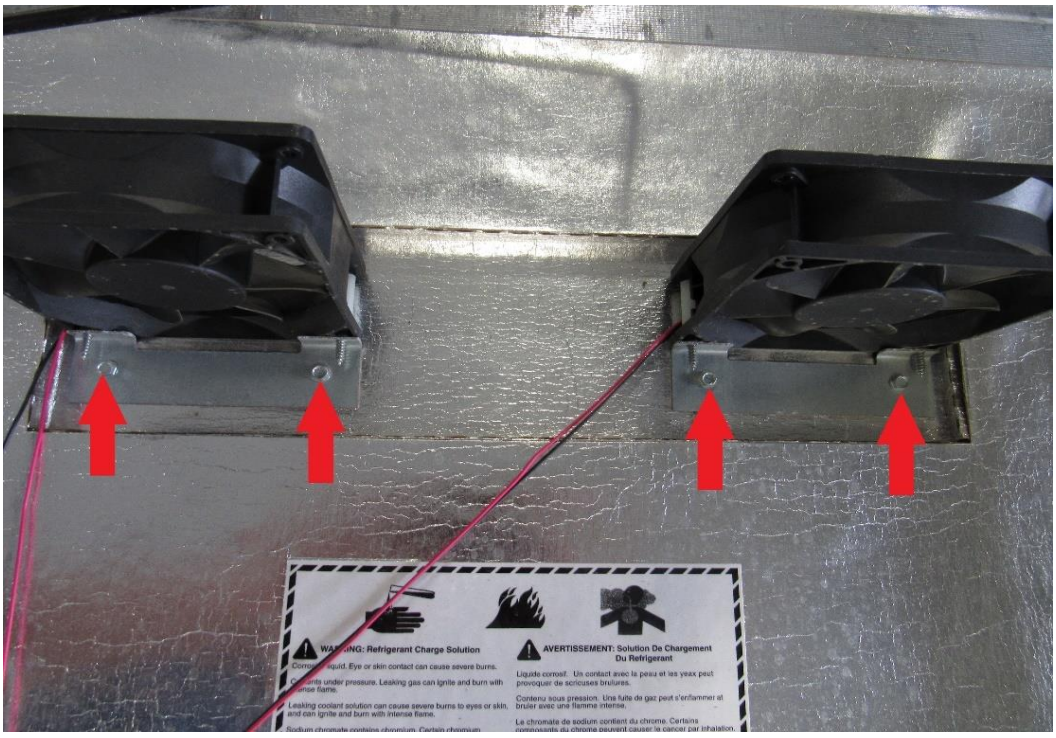
Take the red wire and loop it around, then plug it into the spade where the blue wire was (RA). Spades are labeled “limit in/limit out” if the safety device is being put back on skip this step.



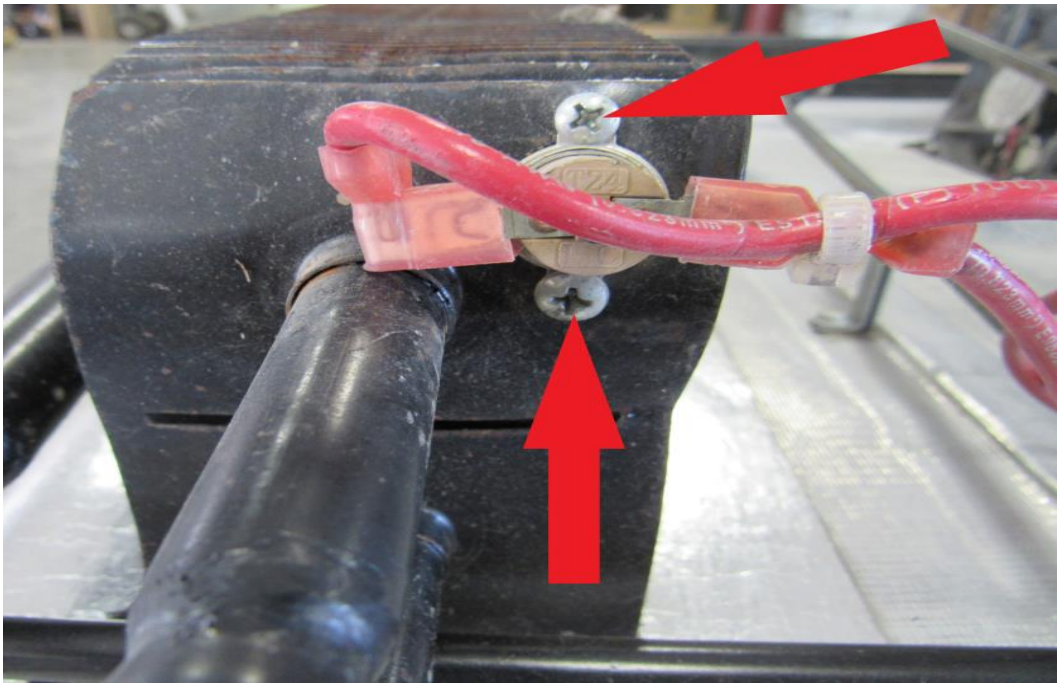
Remove screws from fan (RA). Remove board, cord & ground screws (RA) these will be reattached later



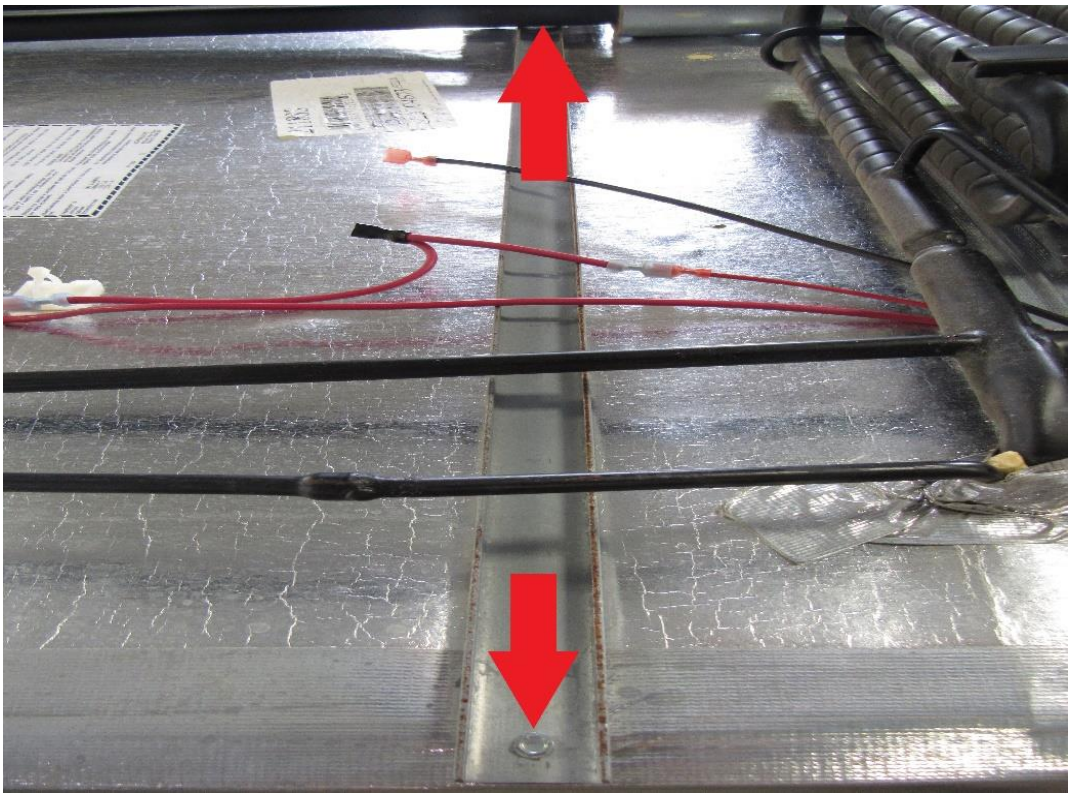
Remove the 4 fan mounting screws (RA) with a ¼" hex bit.



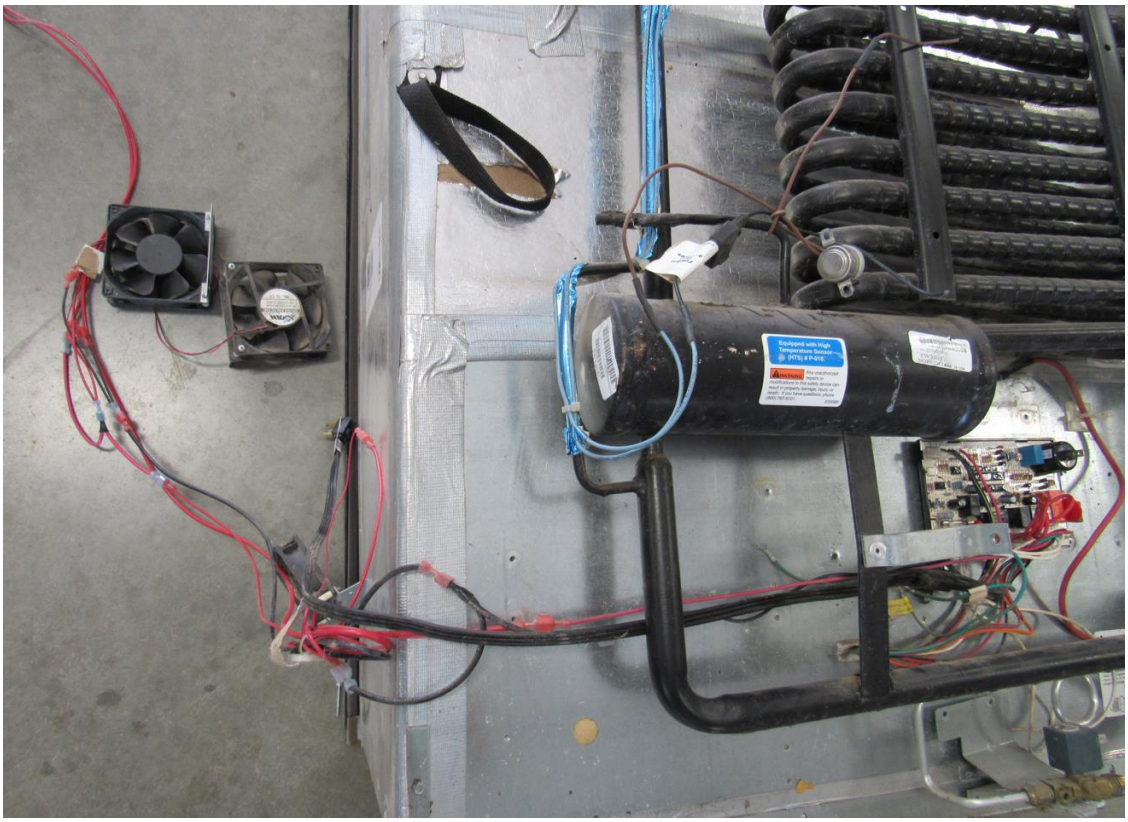
Remove the fan switch (RA), and pull fan wires down to the bottom of the unit to be used later.



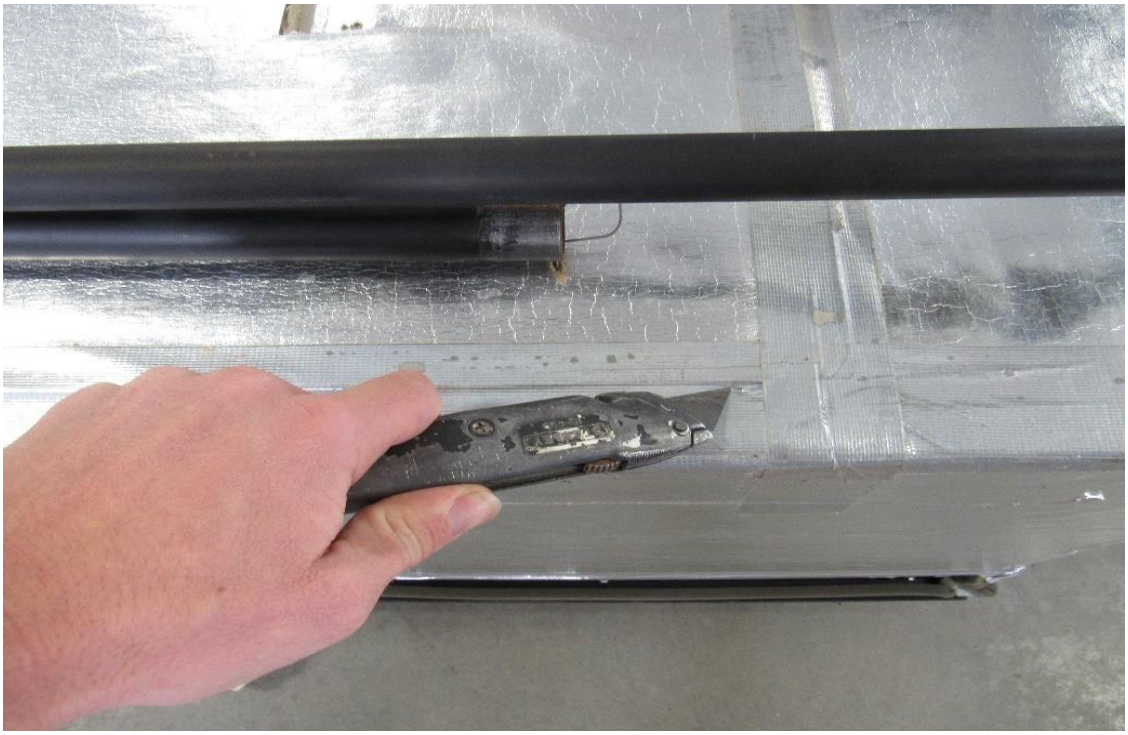
Remove these 2 screws (RA) holding the steel bar and discard.



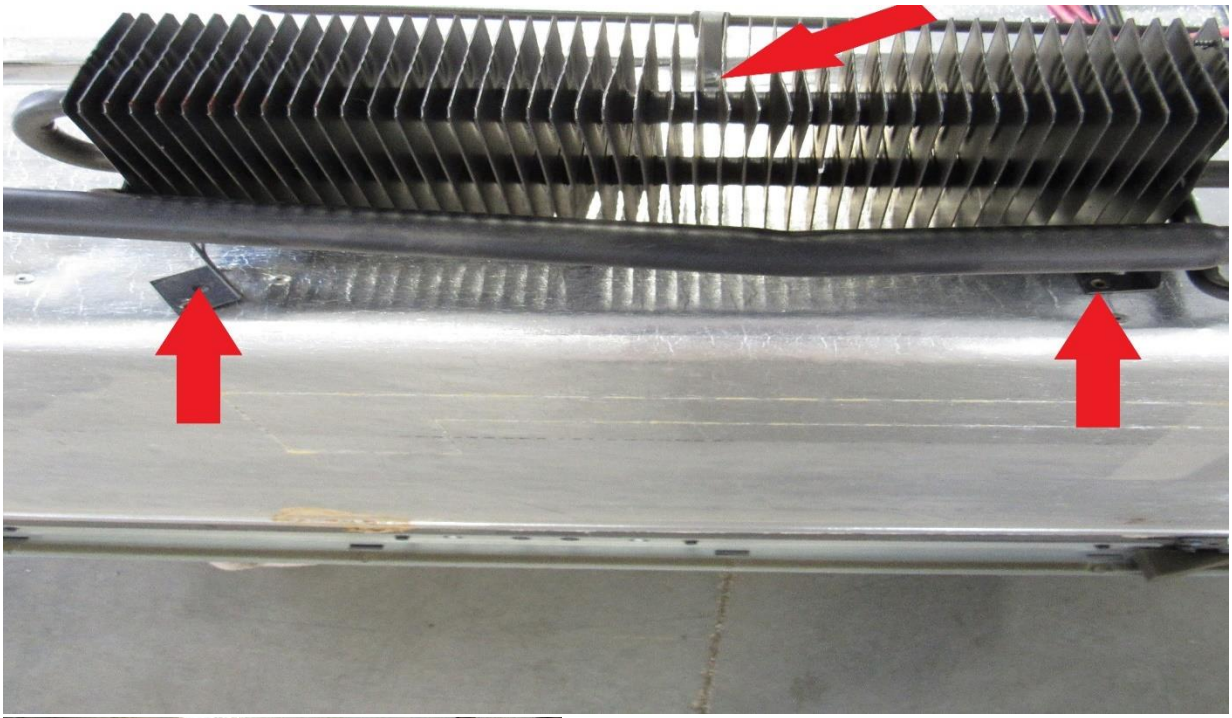
Pull the fans and the wires down to the bottom off the fridge and off the side as shown. Clear the way for the old cooling unit to be lifted off the back of the box.

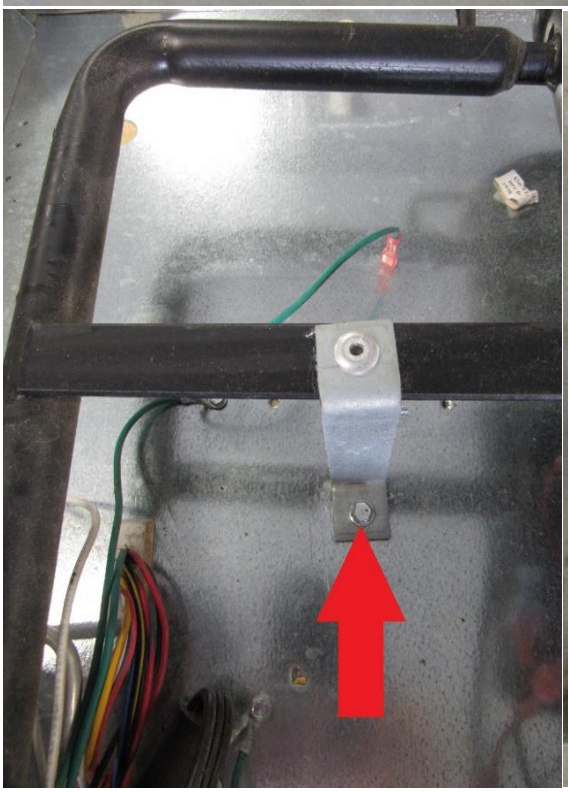


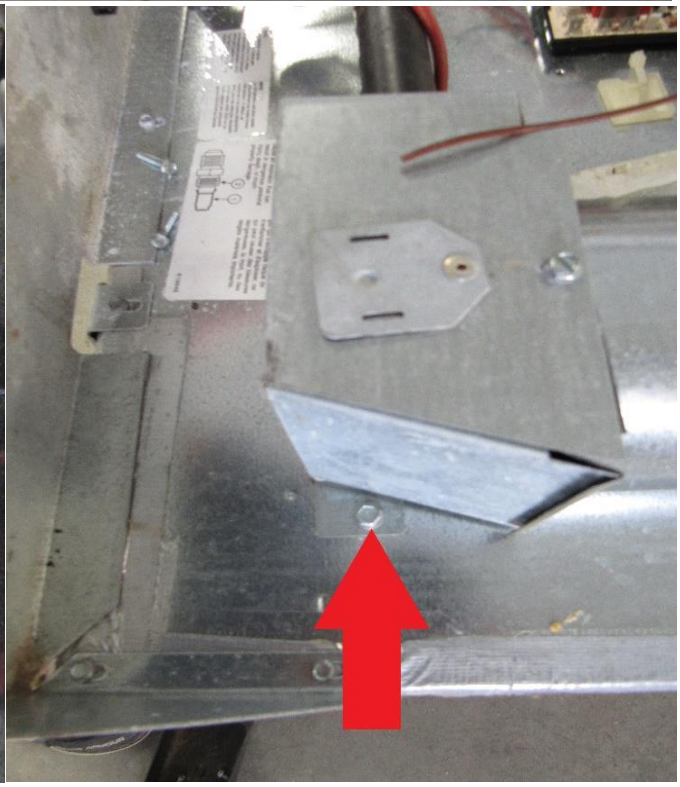
Cut the tape around all edges, between unit and box



Remove the last 5 mounting screws (RA) with a 5/16” hex bit.



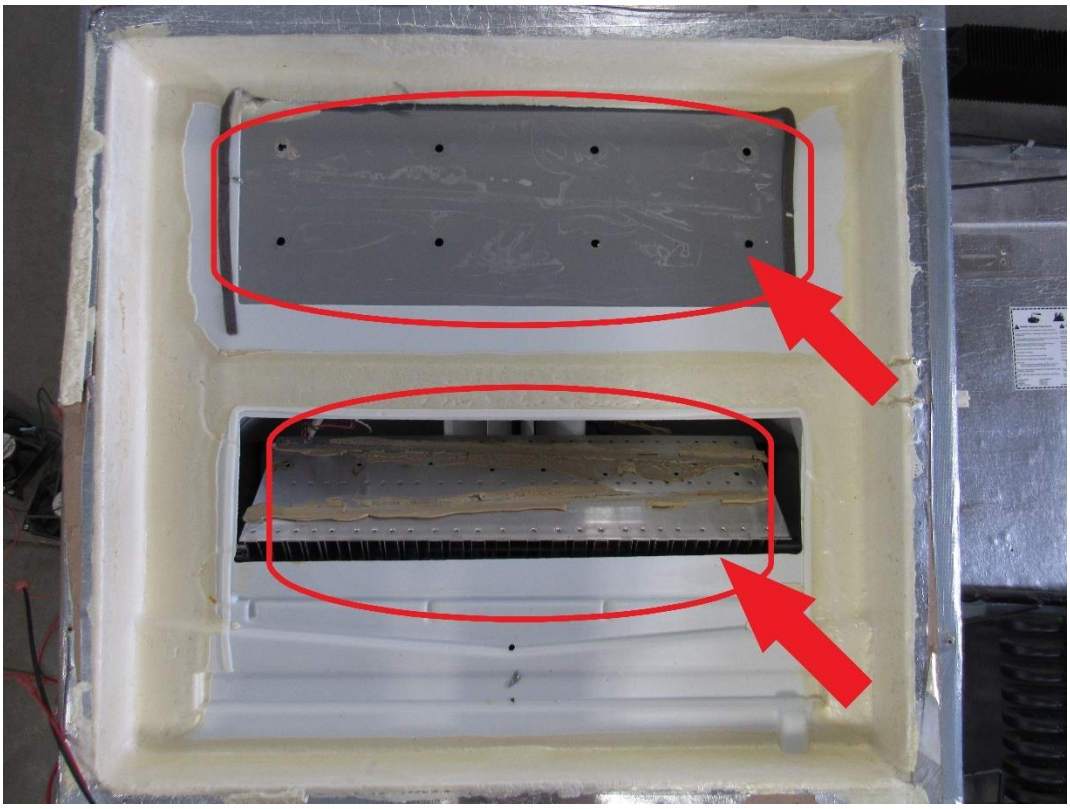




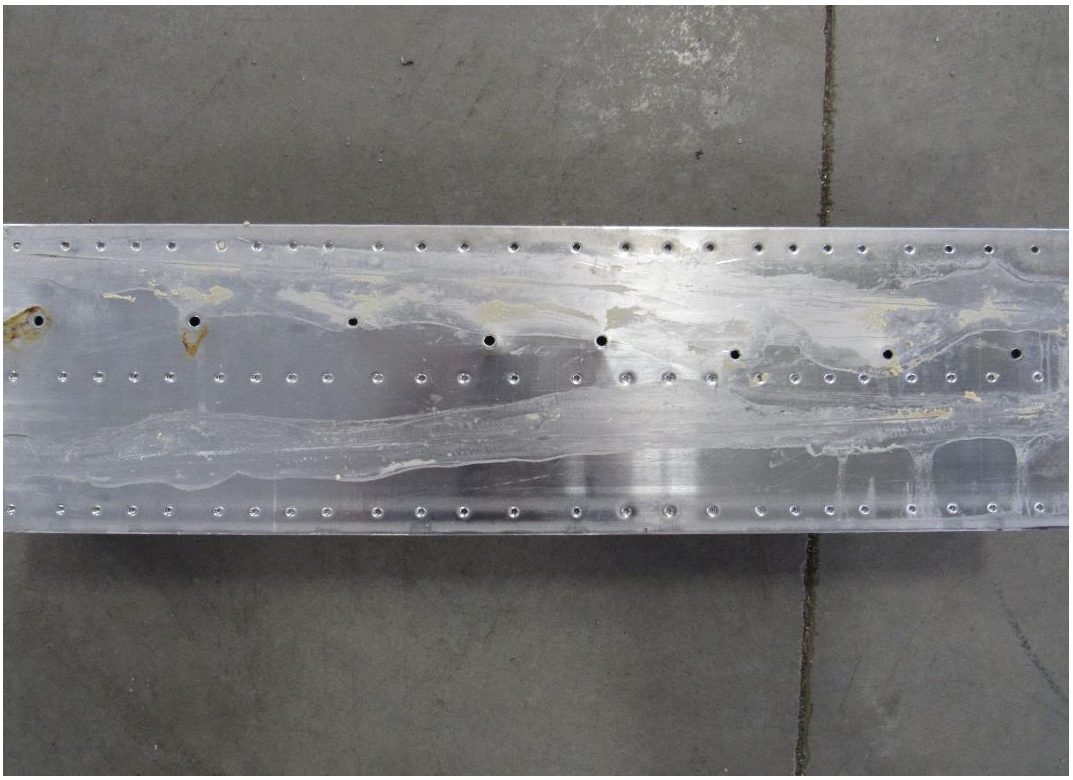
Lift the cooling unit off the box and discard, normally to a scrap yard or land fill.



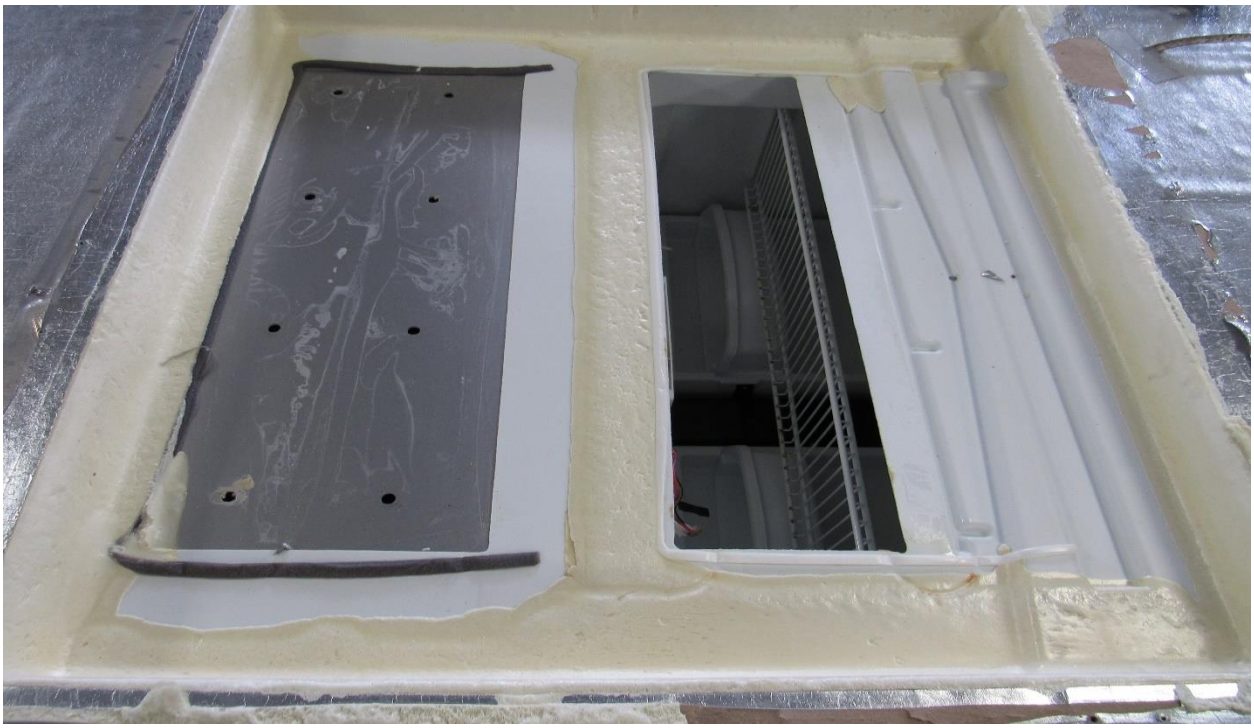
Clean the freezer plate and the refrigerator fin (RA). You can pull the fin up through the plastic cutout to clean.



Make sure fin is clean of old thermal mastic

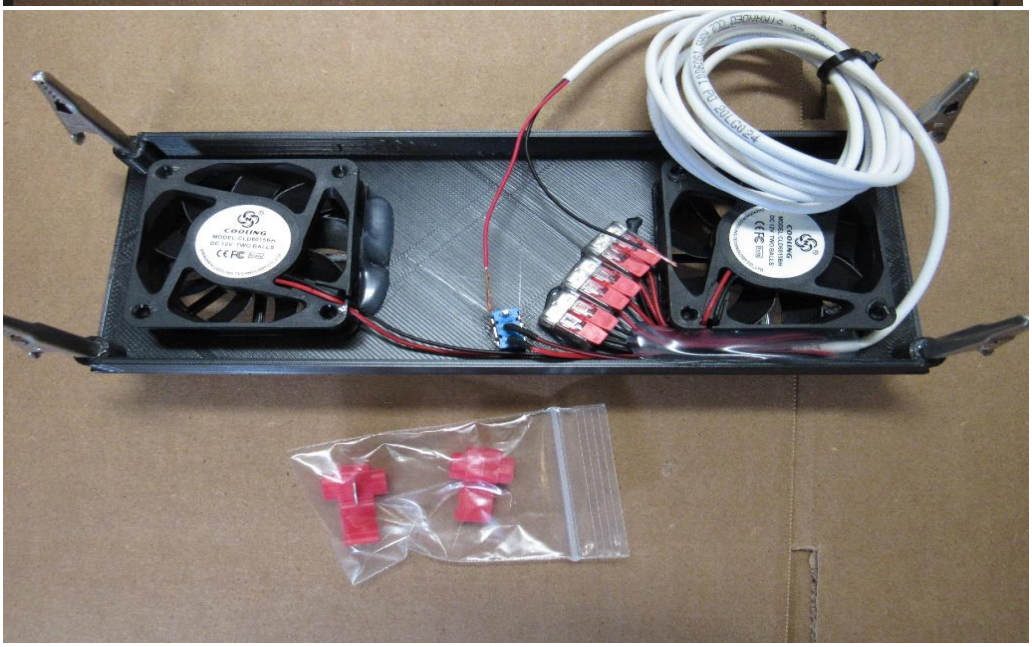


Make sure there is no excess foam protruding along the edges of the box. Trim and clean everything so the new unit will sit nice and flush.



If you are installing a small factory fin fan, take the fin fan out of the plastic bag. It will include two scotch locks that we will use to hookup later.



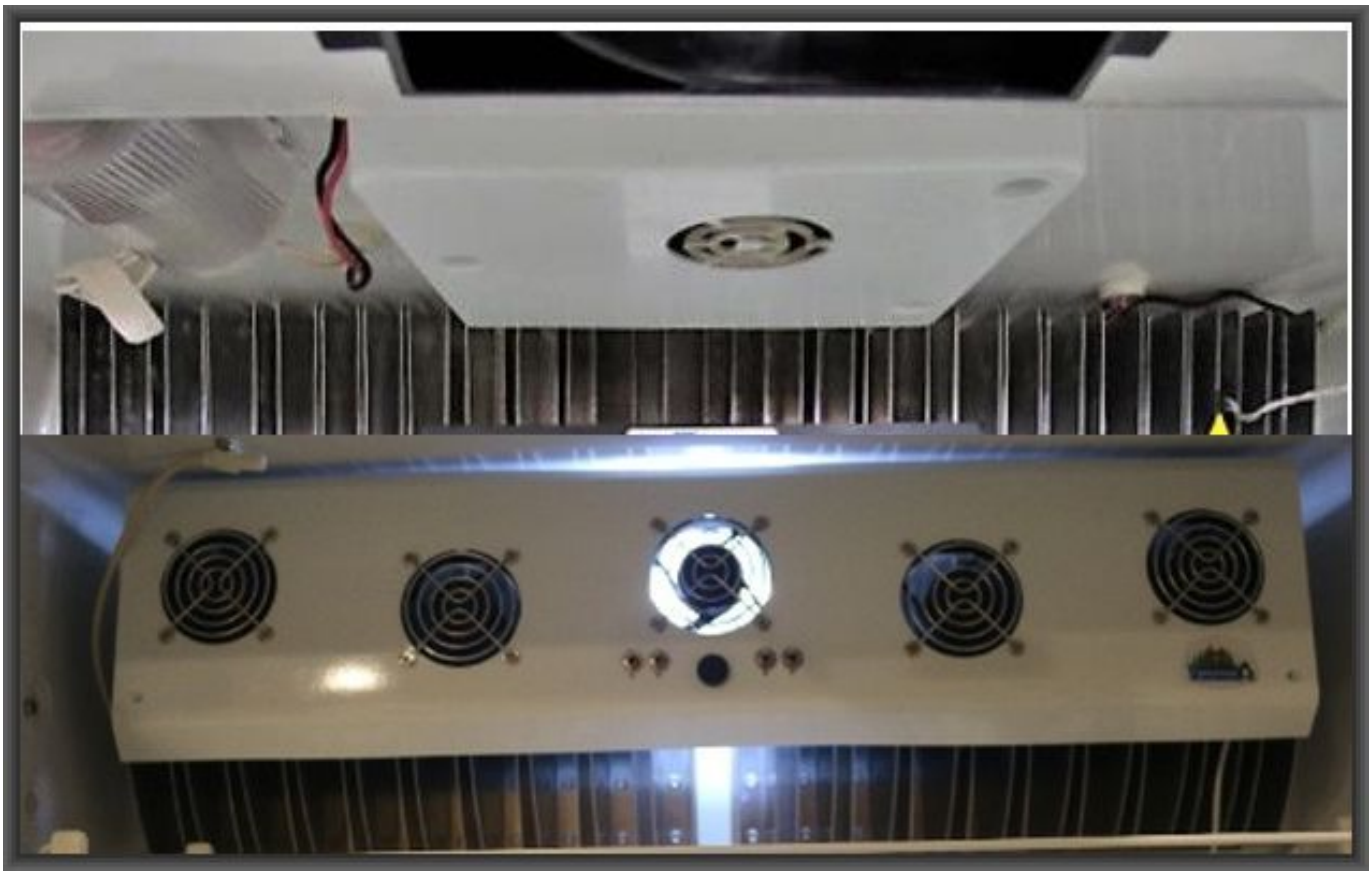


If you purchased a RV Cooling Unit Warehouse Frost Guard fan, installing the fans have 2 options:

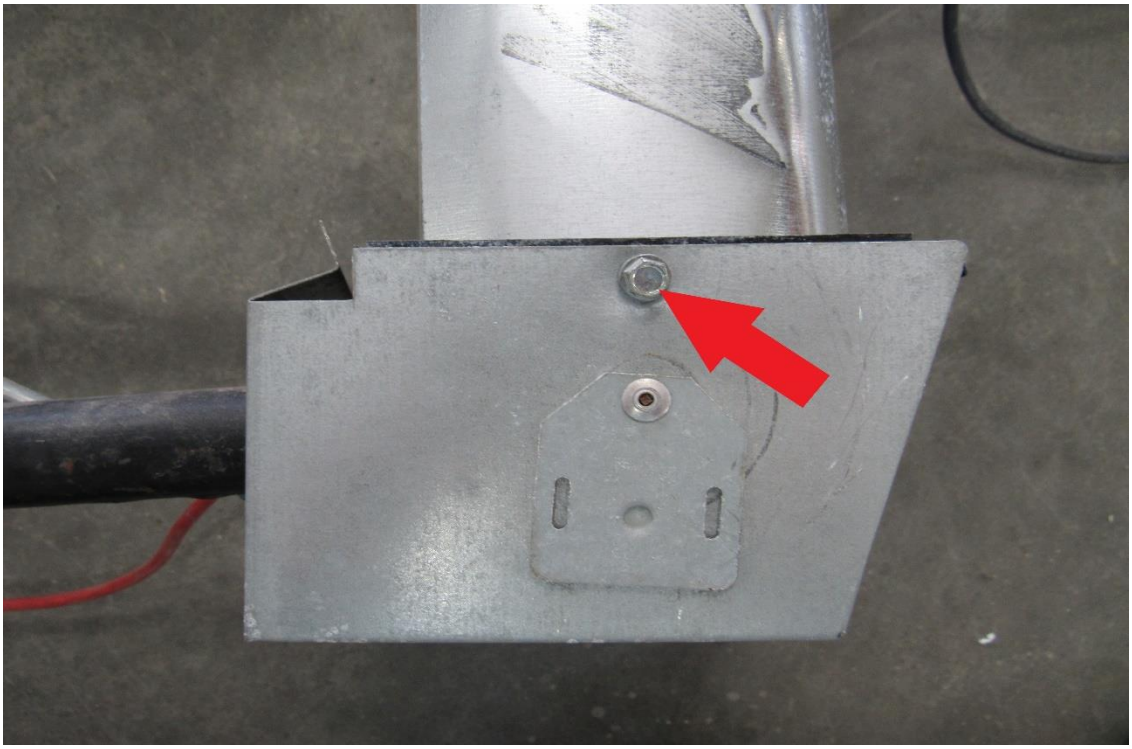
Option#1 Set the fin fan into the refrigerator fin opening, make sure it's somewhat secured to a shelve for now. Leave enough wire as shown inside and also enough on the bottom to hook up with later. The fin fan wire sits as shown below (RA).

Option #2

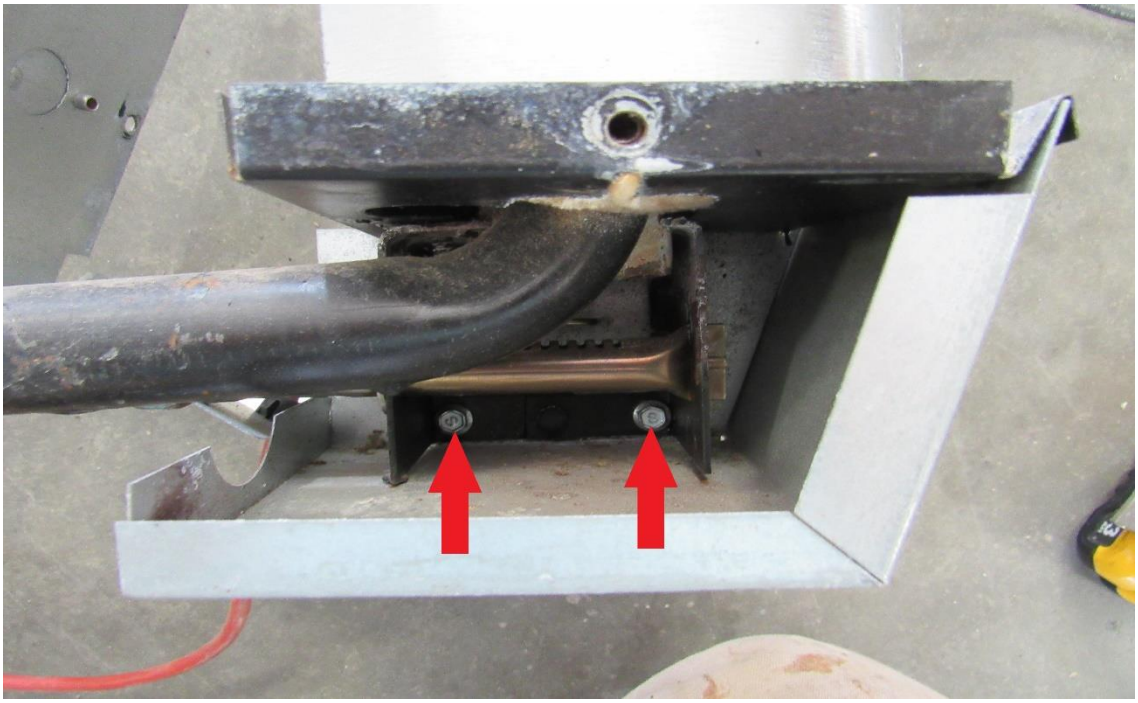
If you would rather install the fin fan wire thru the defrost hose later, please see our Frost Guard fan installation info that comes with the fan for sliding the lead thought the drain tube.



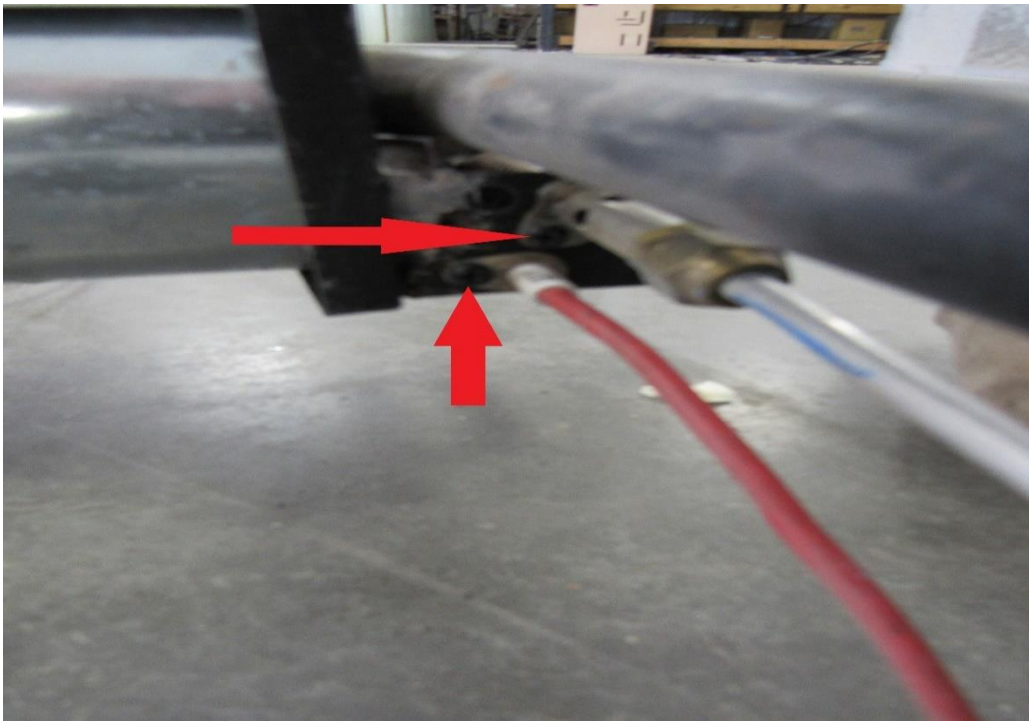
Now we go back to the old unit to take off the LP burner and igniter. Start by removing the ¼" screw (RA). The igniter is attached to this bracket. Leave it attached and just slide the bracket to the side for the next step.



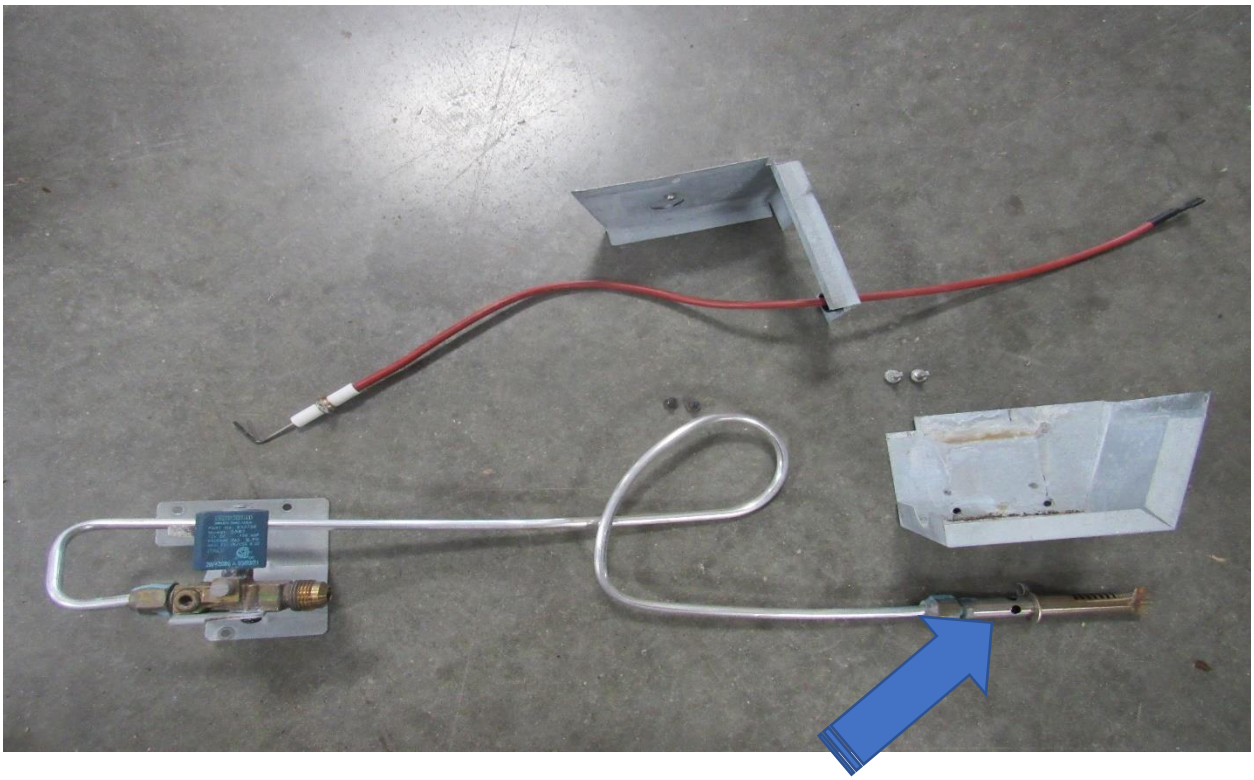
Remove the ¼" screws (RA) and set the burner housing to the side.



Remove the igniter and burner screws (RA). These are usually Phillips screws.

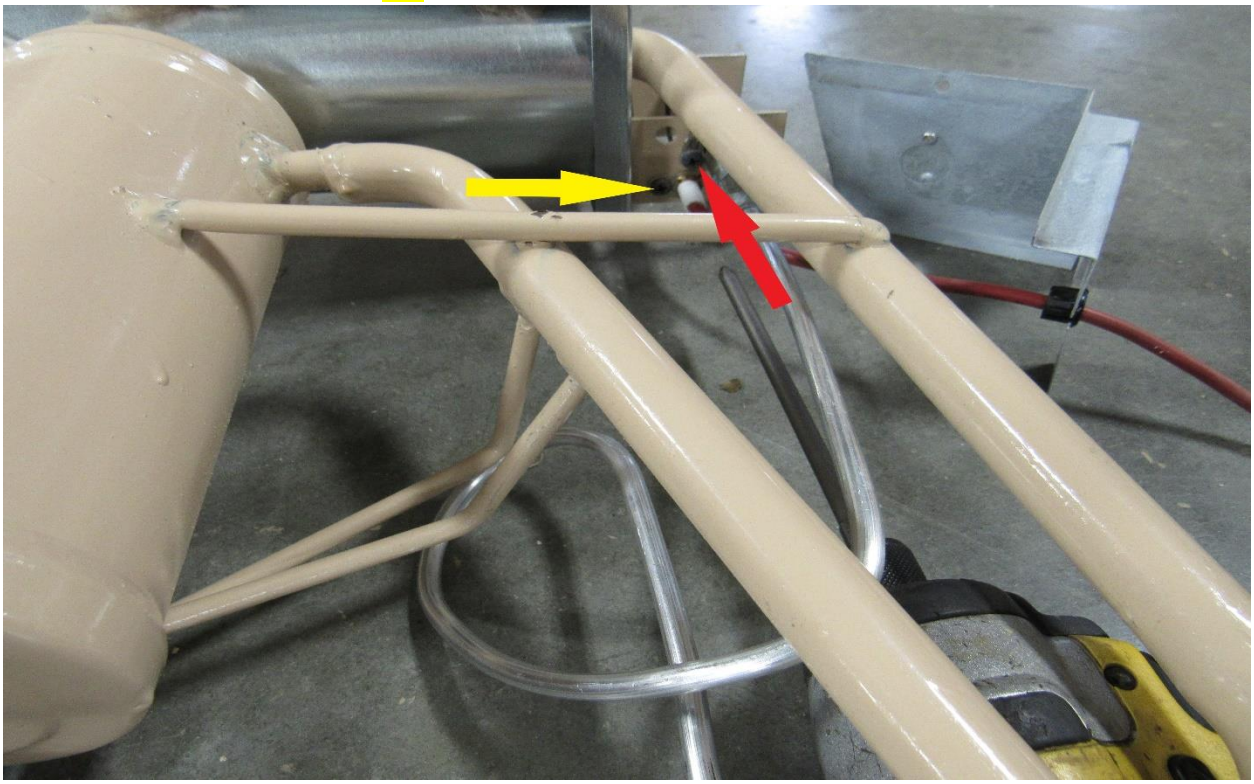


These are the parts to take off of the old unit, and install onto the new unit. The old burner may be removed from the gas line and soak in rubbing alcohol to clean before it's ready to re-install on the unit. (BA) New one's are available.

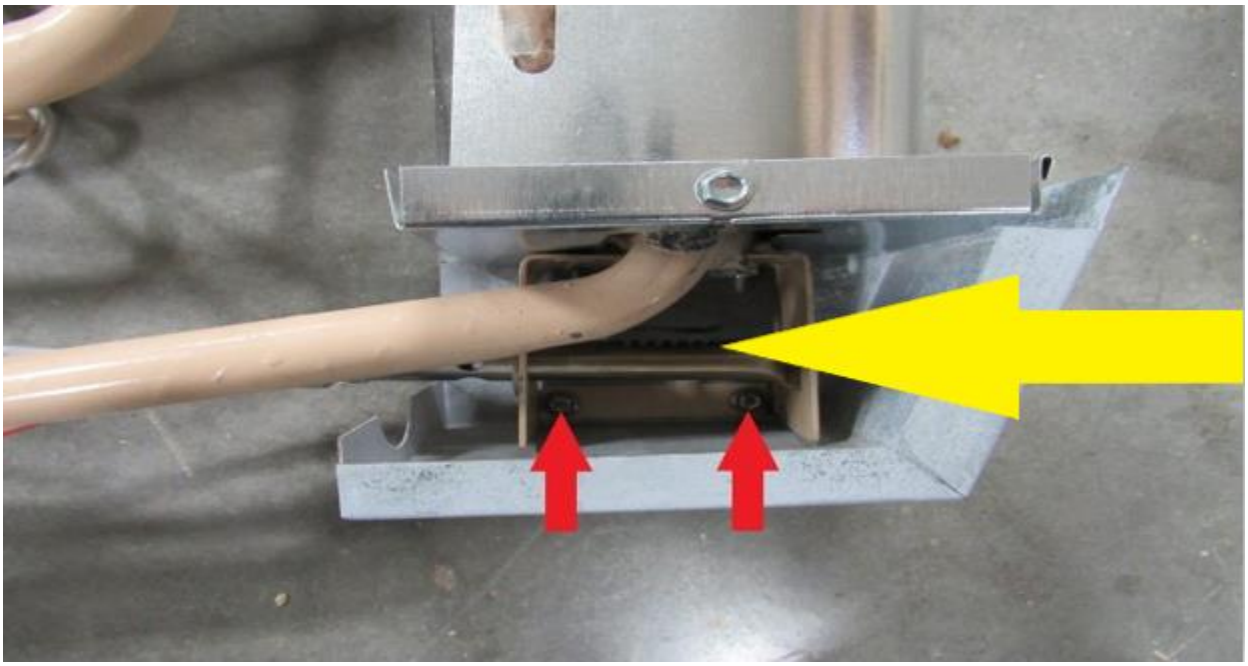


On the new unit, install the burner assembly once cleaned first (RA).

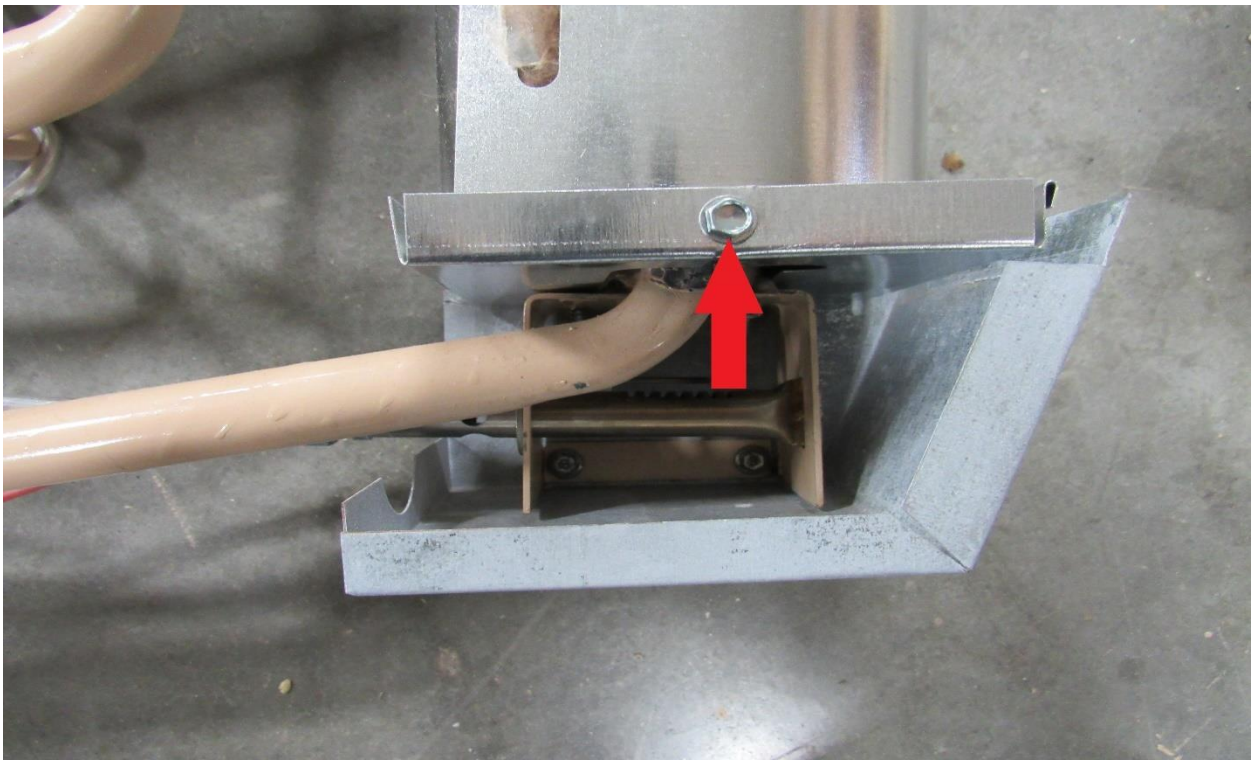
Followed by the igniter (YA)using the original screw.



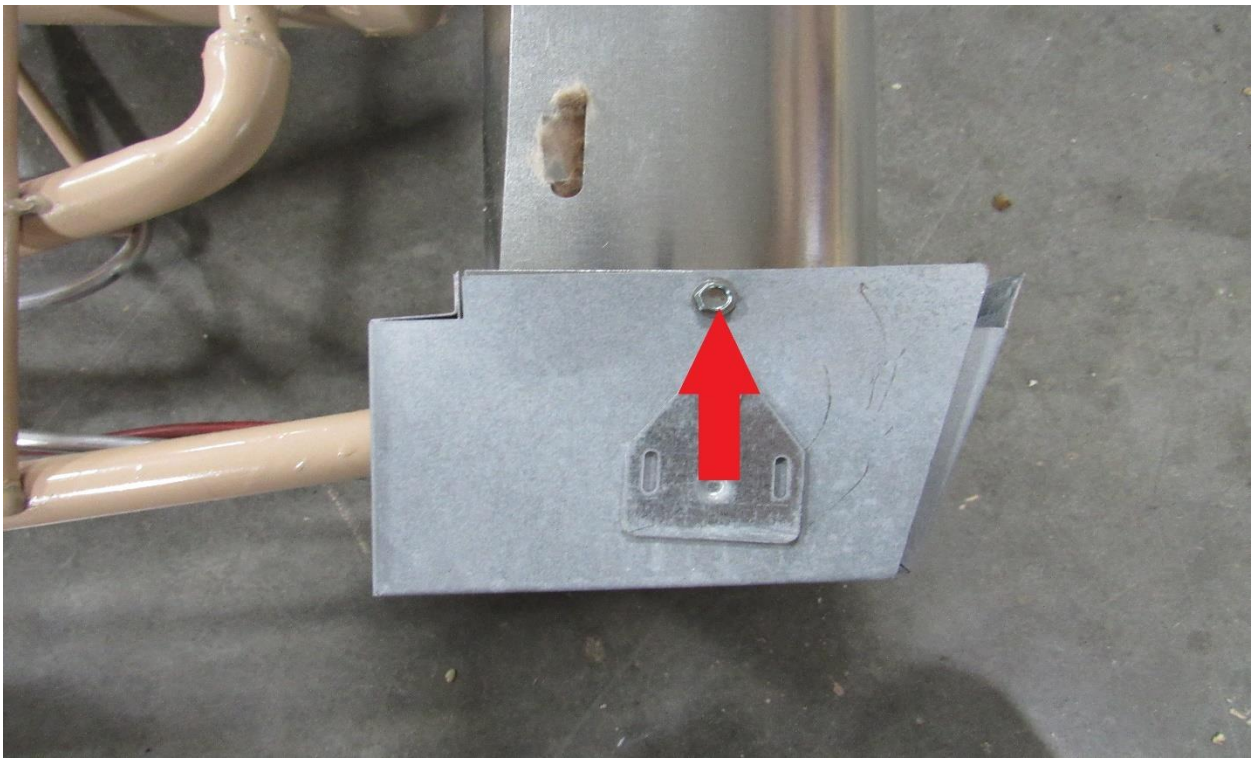
Using the original ¼" screws. Install the burner housing as shown (RA). Make sure you have approx. ¼" gap between burner tube and igniter electrode (YA).



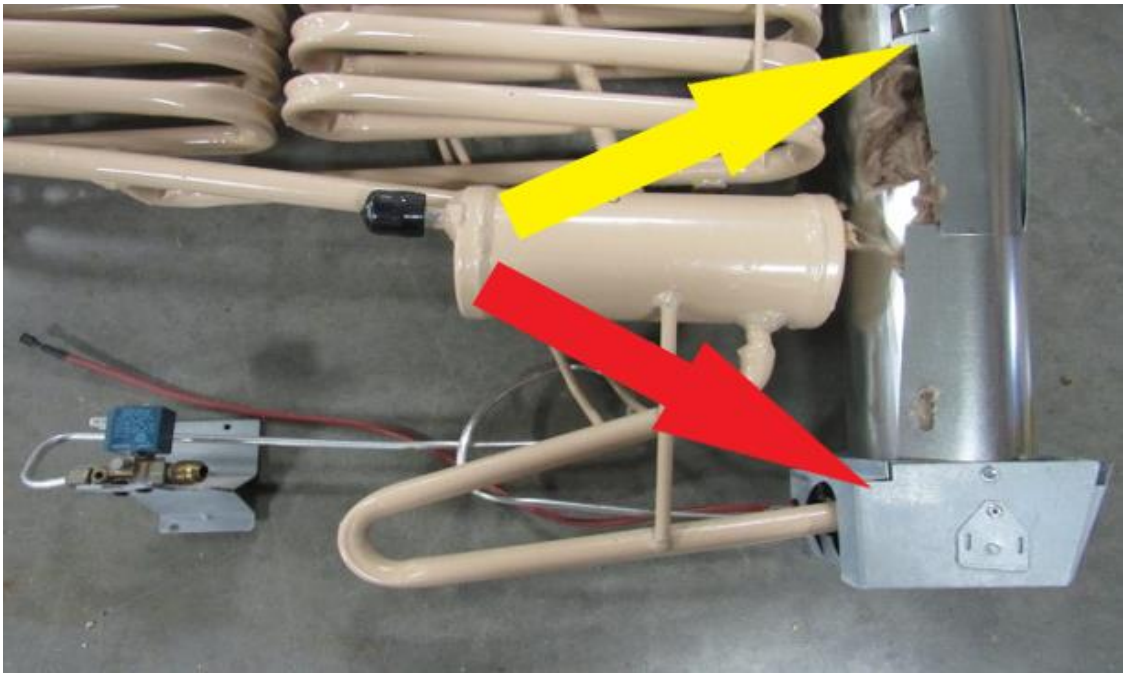
Remove the top screw from the new unit as shown (RA). We will use this screw to mount the top piece in the next step.



Hold cover on top and install the ¼" screw as shown below (RA).



This is how your burner and igniter assembly should look after you're done. (RA) Now unsnap and open the heating element flapper (YA) your 2 heaters should ready slide in place. You can use the old heater or New one's if you purchased



Push the insulation back so the 2 heating element sockets are exposed, and slide the 2 heating elements into the sockets, make sure they are pushed all the way down to the stop point on the heater. Push insulation back over the heaters and close the flapper again and tuck the heater wires out of the way for



Lay the unit on its back for the next step.

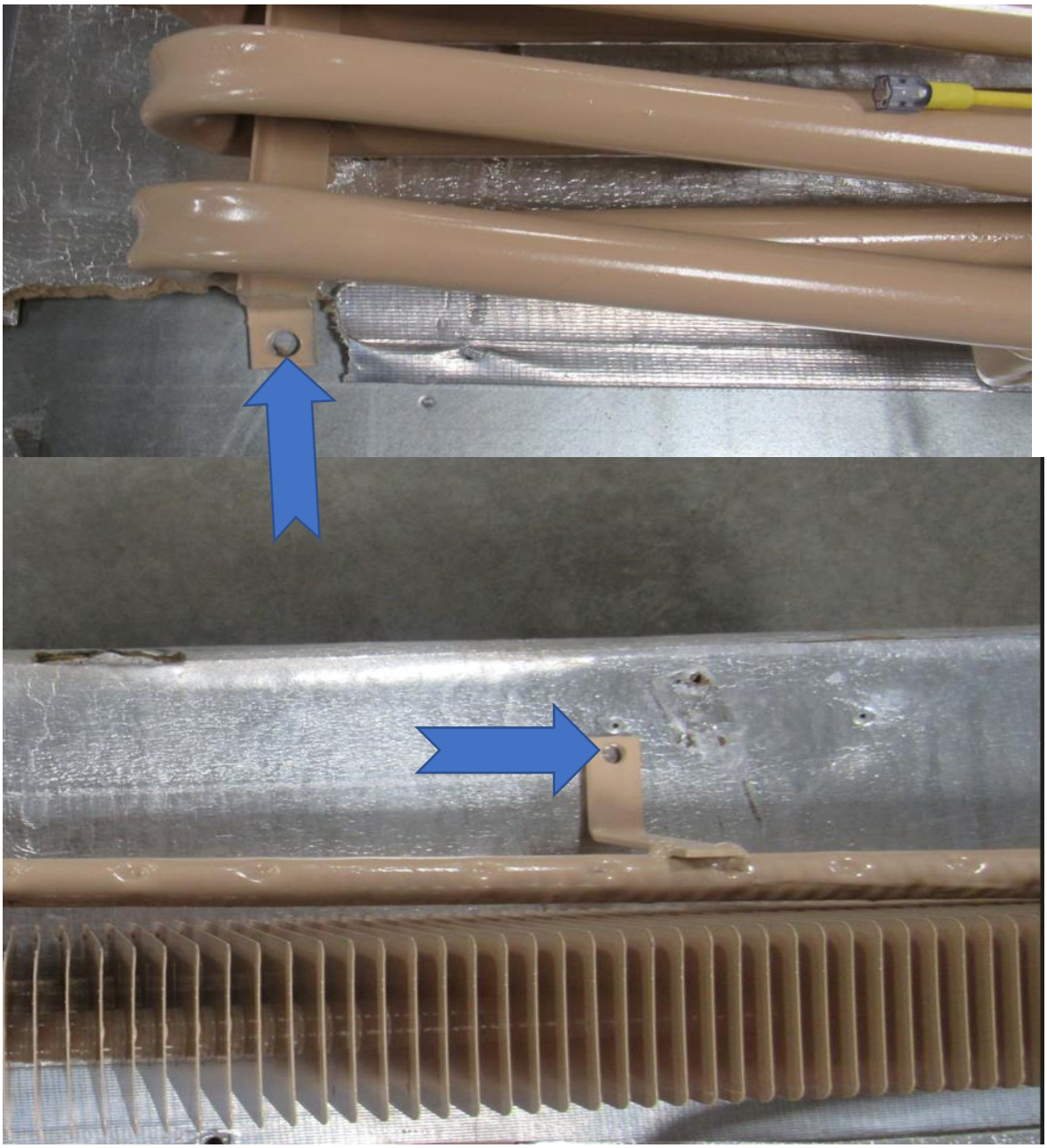




Take a caulk gun and place a small bead of thermal mastic in this fashion. You will need to use the whole tube.



Carefully lay new unit into box, make sure you don't scrape off any Thermal Mastic off the cooling tubes as you go in. Put 1 screw into the bottom and top bracket to hold in place, (BA) the exterior mounting screws holes will not line up, use the original Norcold mounting screws which are self- drilling screws. Set the fridge in upright position. It works best to have 2 persons for this step



If holes are not aligned in the freezer have the rear person remove the bottom/top mounting screws and shift the unit side to side or up and down, until holes are aligned, or if alone you have to set fridge back down, take out mounting screws and adjust the unit to where the holes line up. It does not have to be perfect, just close enough where you can see the edge of them. Don't be afraid to sand or shave foam off the side, top or bottom to let the unit slide the way it needs to go to line up the freezer screws. Pictured below is an example with the holes just visible.

Warning: The box holes can be redrilled or enlarged to make holes line up and then the washers can cover the hole.

<u>But do not *ever* drill new holes</u> into the cooling unit plates as you will hit the cooling tubes causing a rupture. If part of holes are visible you can either leave them as is since unit will be sealed in the back or you can use white silicone caulk to cover the holes.



When holes are lined up, install 8 freezer screws (RA), using the #10X2”screws in the parts bag, pulling the unit tight against the back.



Install the refrigerator fin with new #10X2”screws (RA). Make sure the fin is not upside down, as the holes will not line up.



Lay fridge back on its face, these gaps between unit and box are normal as we intentionally make the unit smaller so you have wiggle room.





Warning: Make sure this step gets followed precisely, otherwise your fridge is unable to cool properly

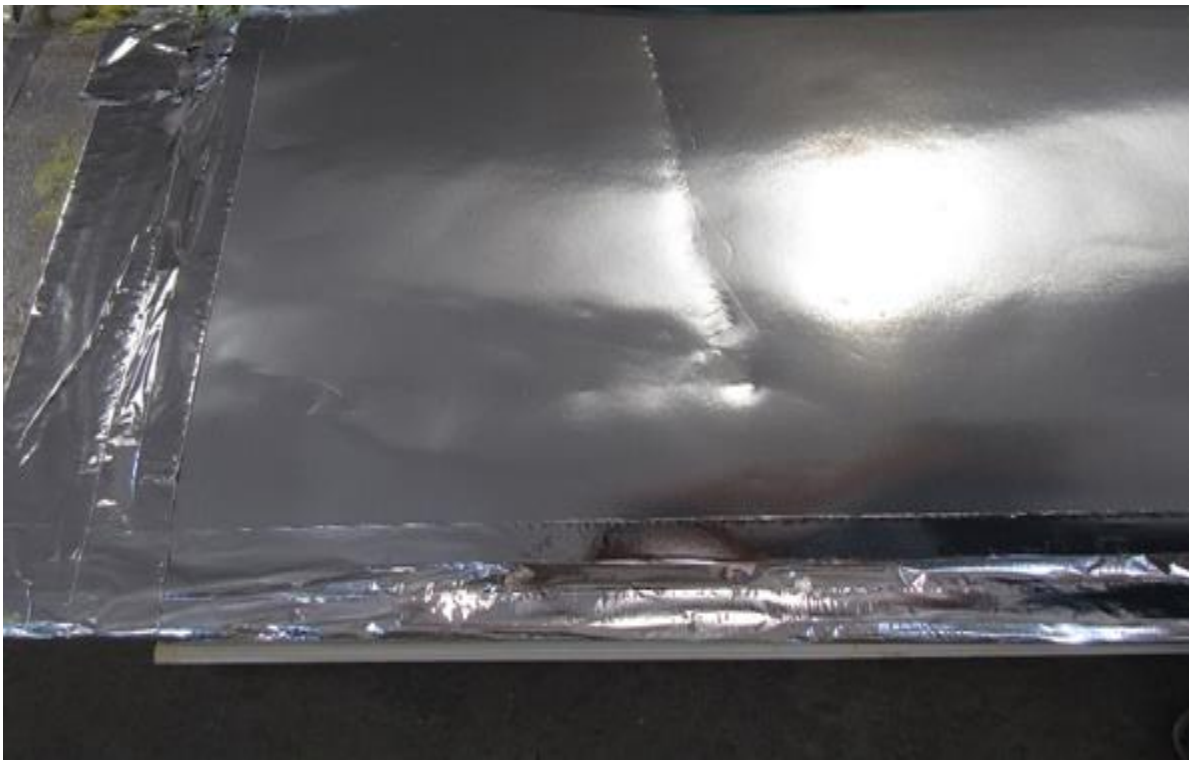
Take the can of foam from the parts box. Shake can for a few seconds and apply a bead of foam around all four sides as shown below. Make sure and seal all cracks and gaps. This will seal all air leaks while traveling down the road. Your cooling unit will not work properly if this step is not done properly. In the hard to get to areas you will still need to insert the foam along this edge.



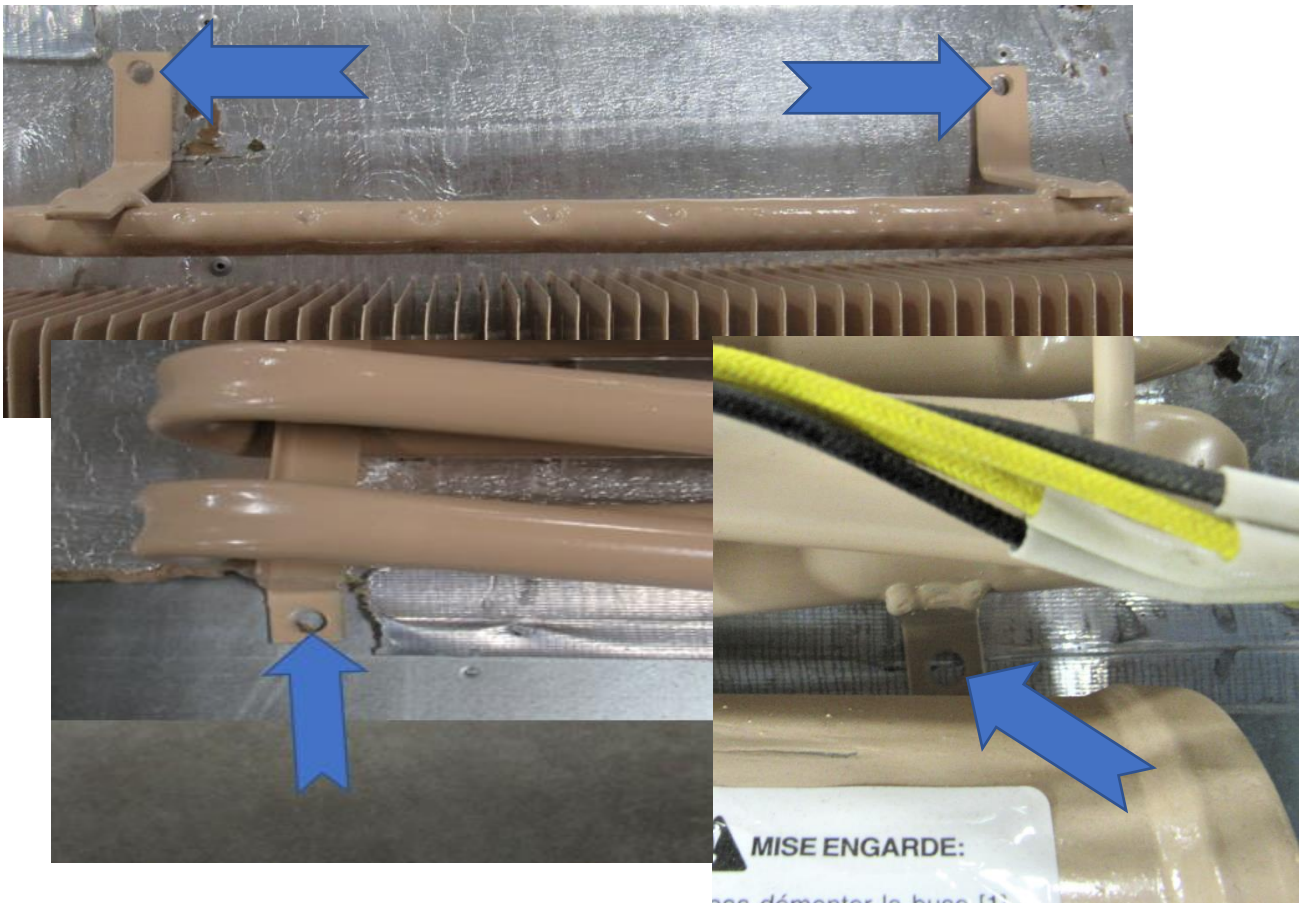
In some areas it might seem to be tight against the box, and in this area cut back enough foam on a angle to create a small gap off the unit so you can get your foam straw in to fill the void further down. We cannot stress enough on this step because if even a small 2” gap is left open it will not cool in the fridge like it should.



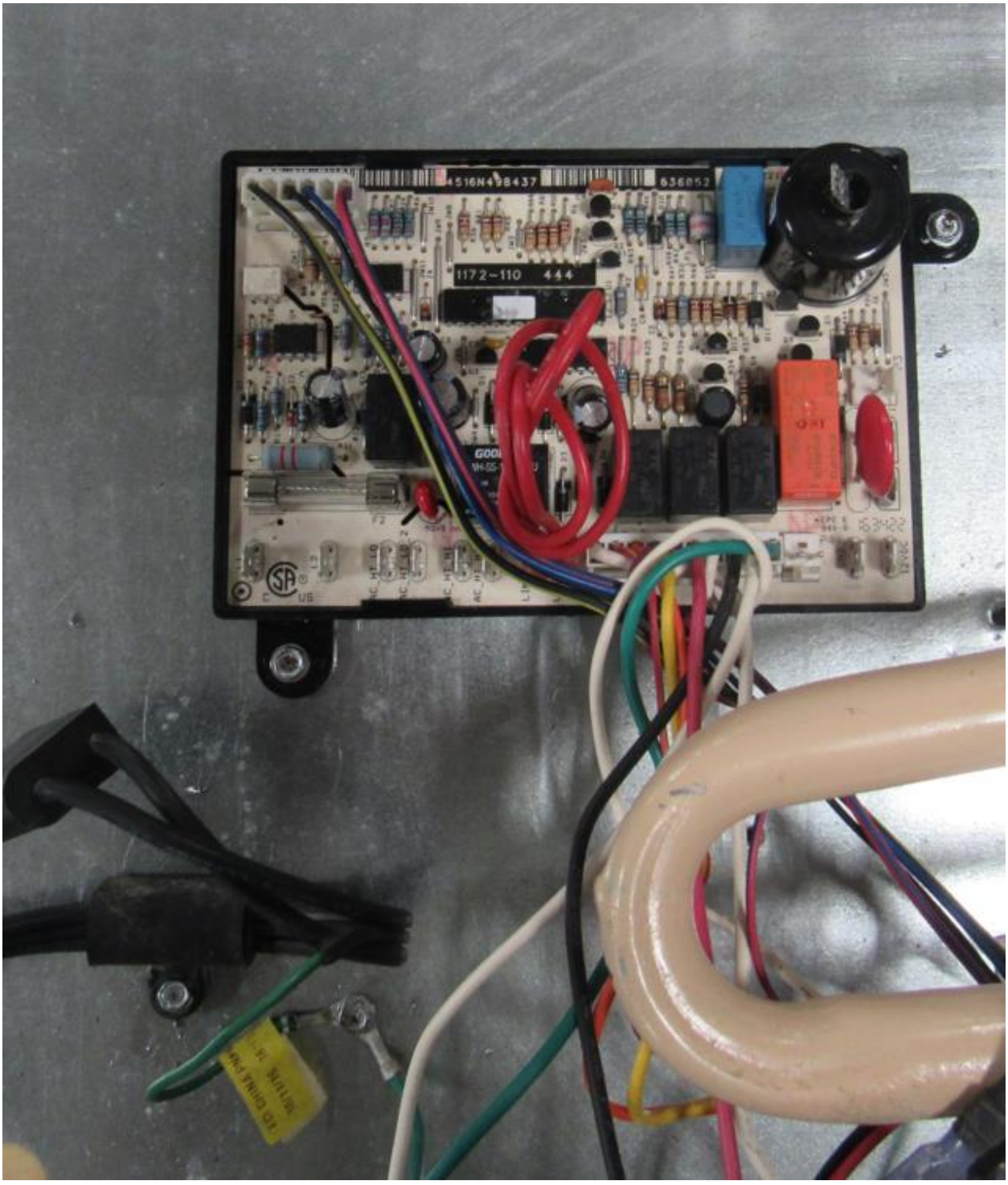
After filling all gaps with foam, Apply the supplied aluminum tape as shown. This tape is for cosmetic purposes only, do not depend on this tape as a sealant.



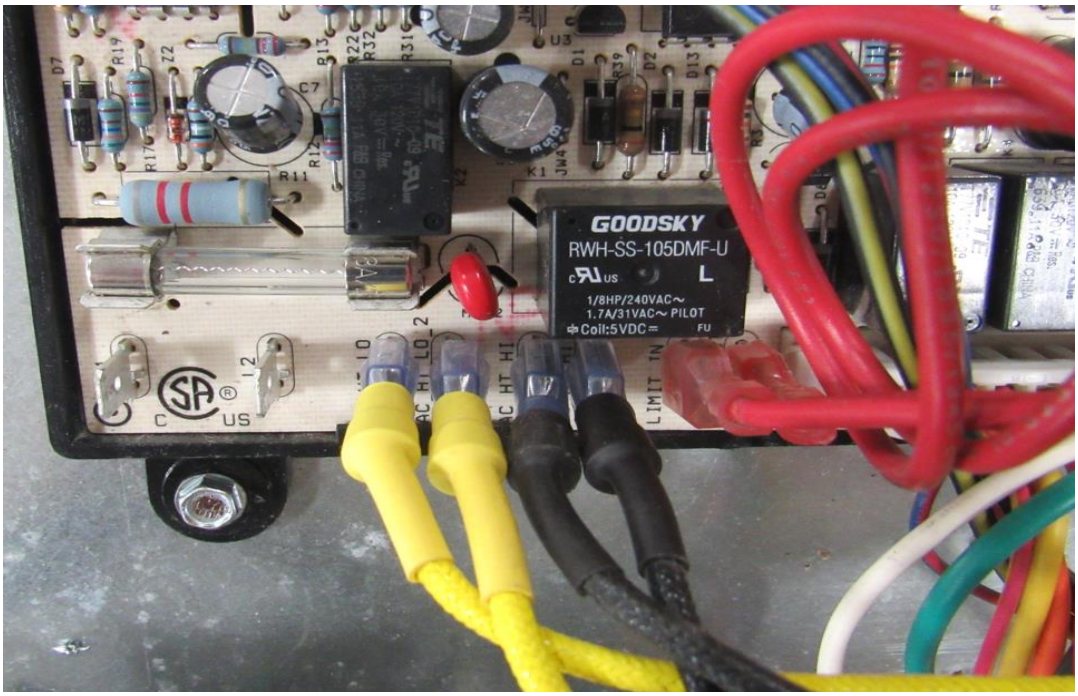
Put all 4 rear mounting screws back in (BA)



Remount the board, cord & ground screws off to the side from where it was before.



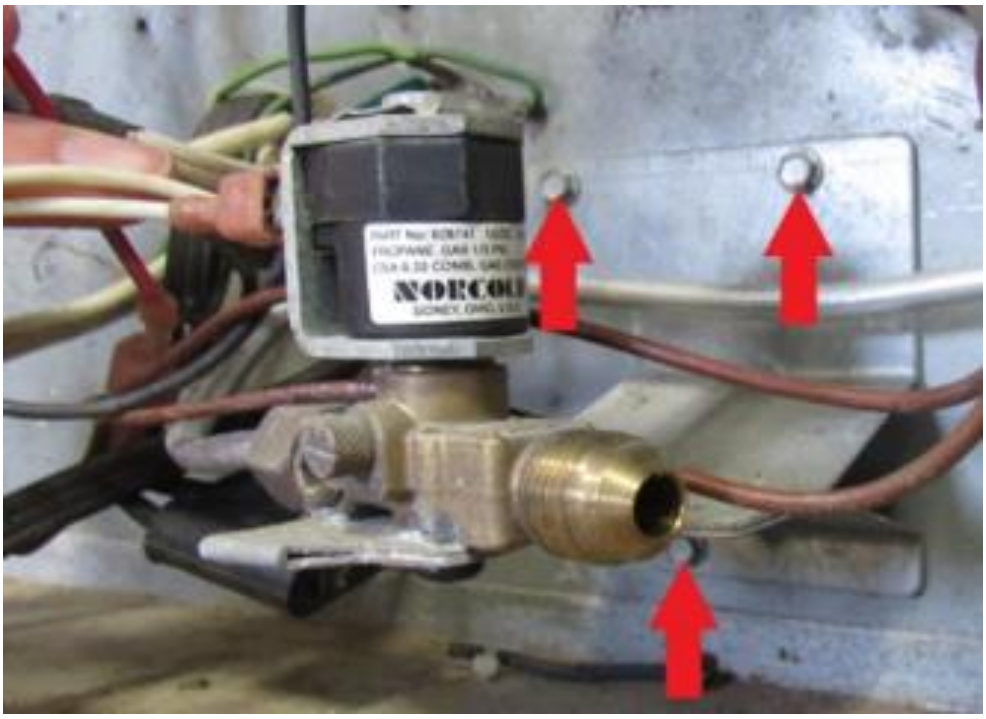
Install the 4 heaters wires onto the board, make sure the 2 yellows are together and the 2 blacks are together (yellow HT LO) (black HT HI). Now would be a good time to take compressed air and blow out the board area for dust or moisture.



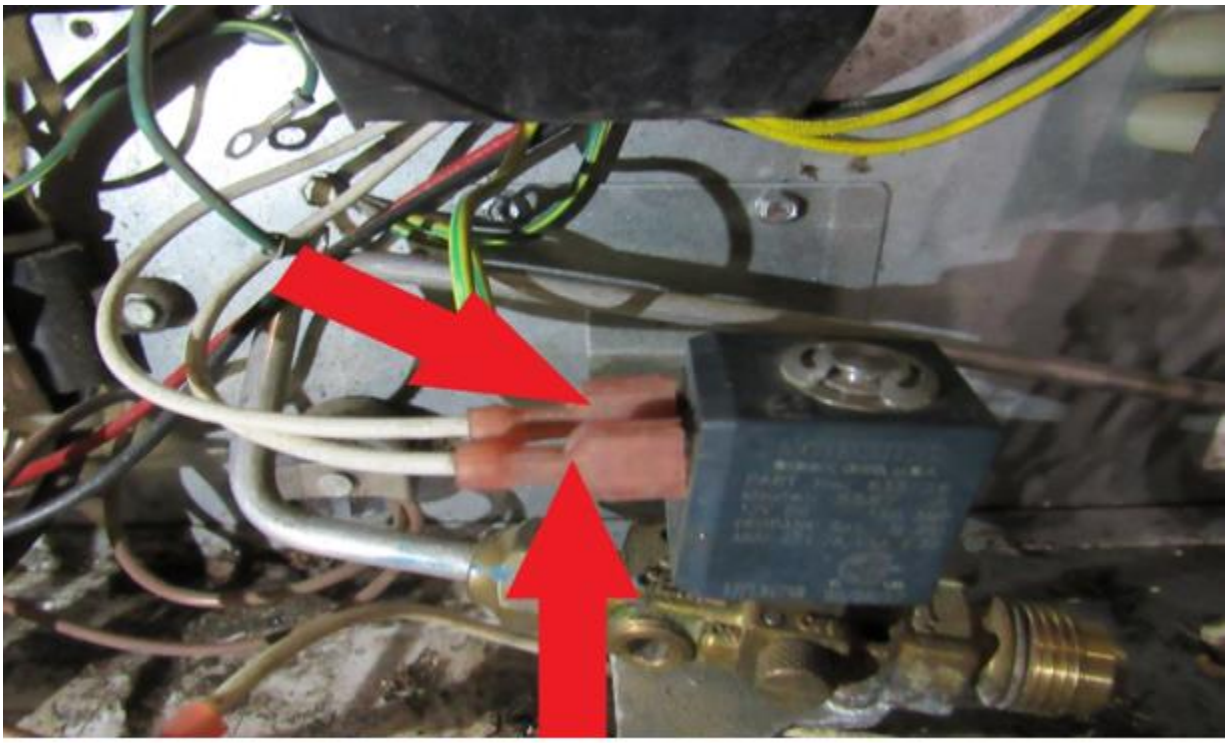
Reinstall board cover (RA), igniter wire (BA) and cord plug in (GA)



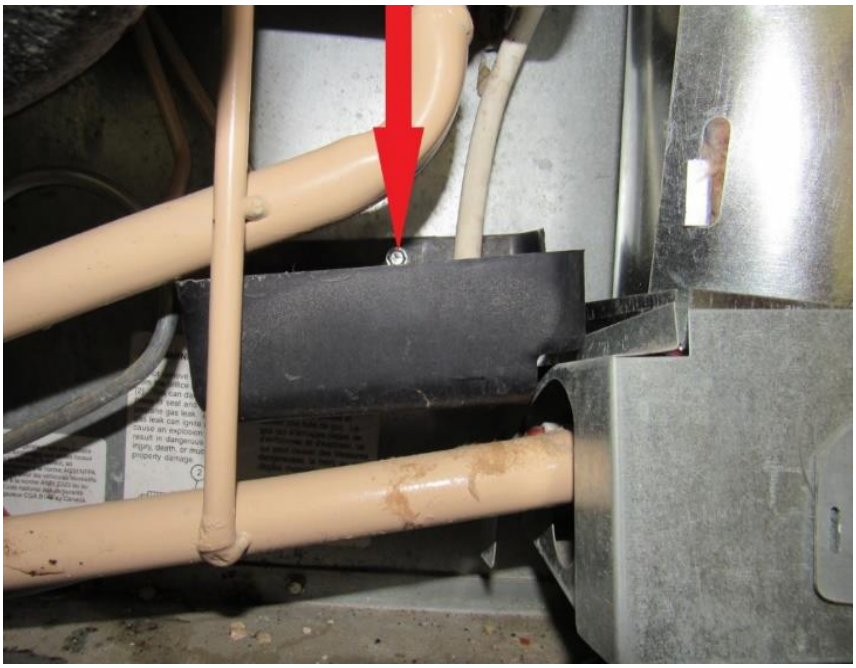
Install the three screws into the LP solenoid valve as shown.



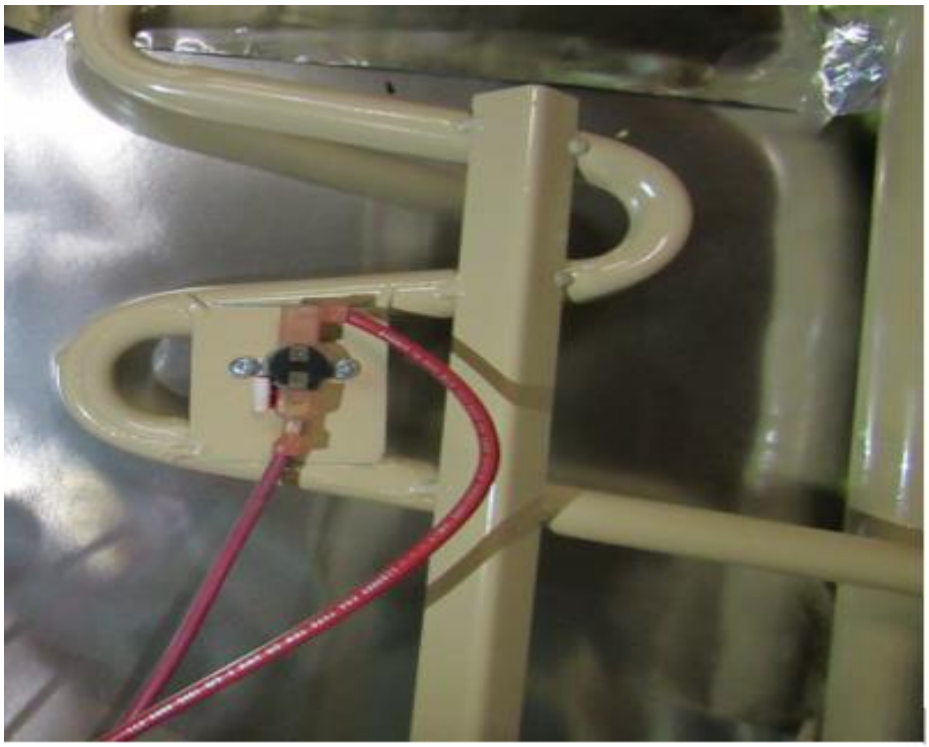
Plug the 2 white gas valve wires back into the gas valve (RA)



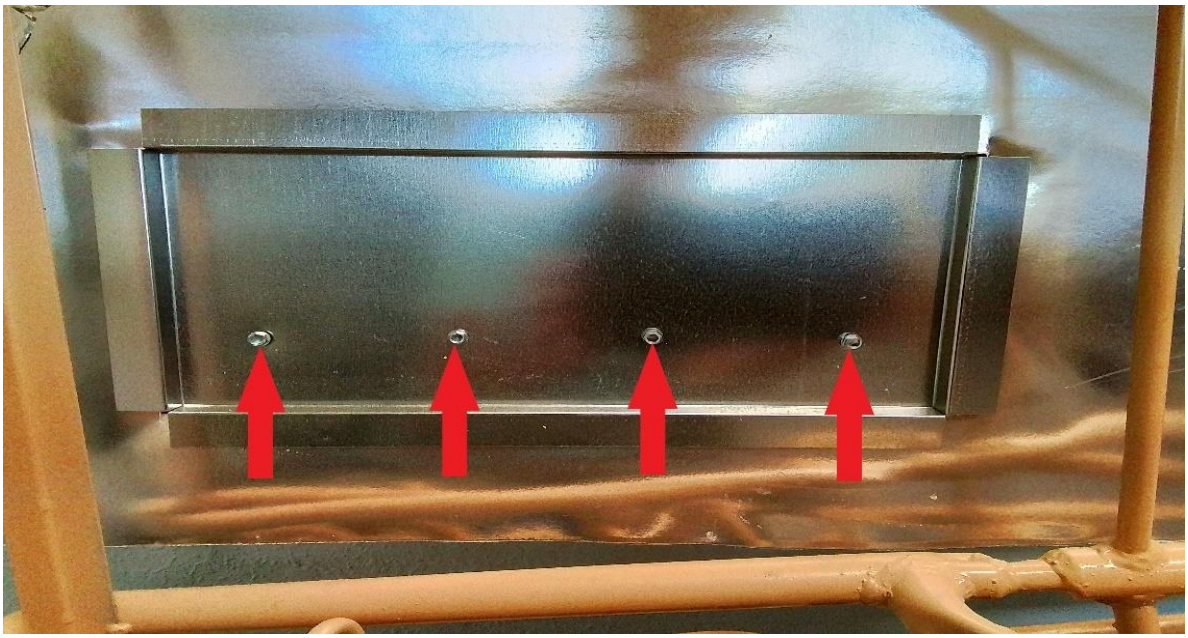
Install the defrost cup as shown, and secure it with a self-taping screw (RA).



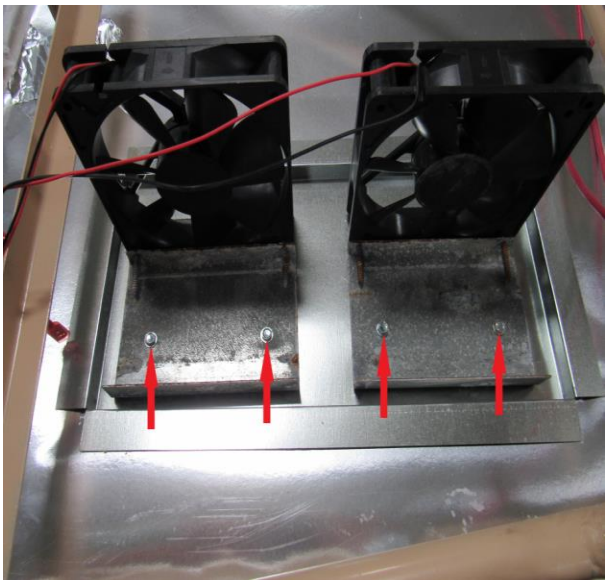
Mount the fan switch onto the plate marked fan switch using the 2 small screws taken out of the old unit, do not locate the fan switch up on the fin as the old one was

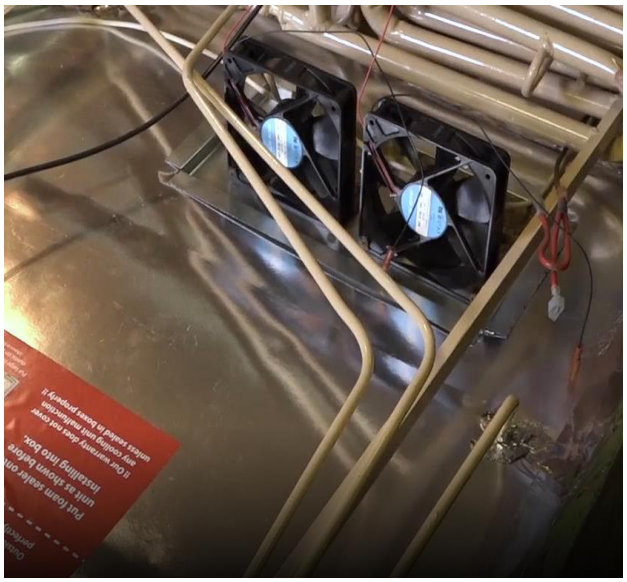


Locate your ventilation fans. Remove the 4 screws on the fan bracket (RA).

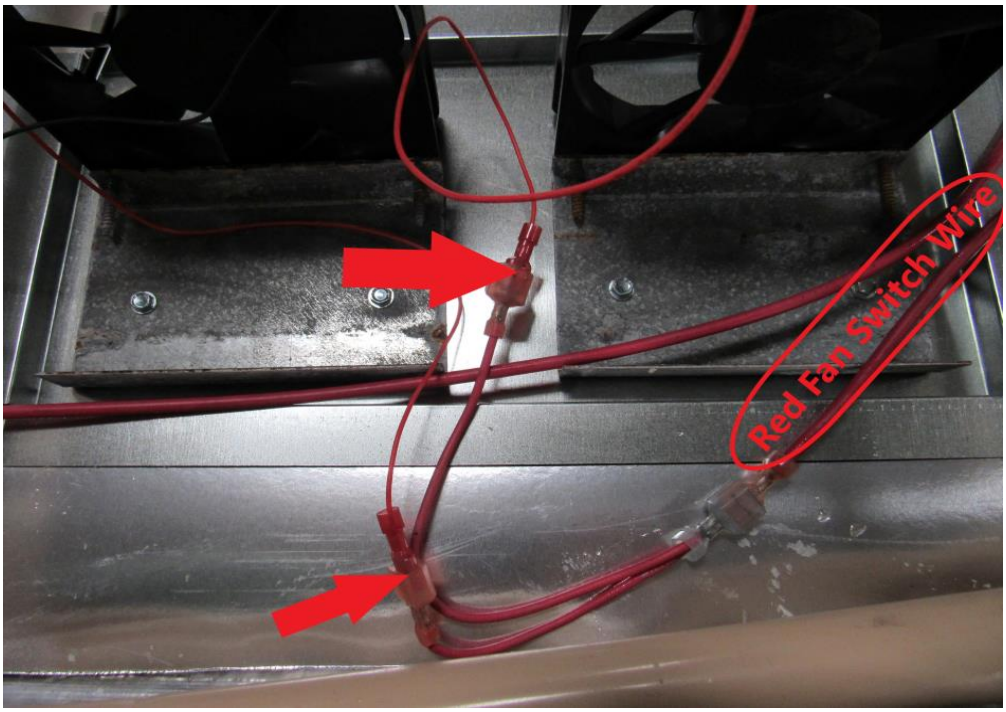


Place the fans facing up and install them using the provided screws (RA). Make sure the sticker of the fans are turned up, use only the holes that were there from the screws taken out do not make new mounting holes into this fan plate.

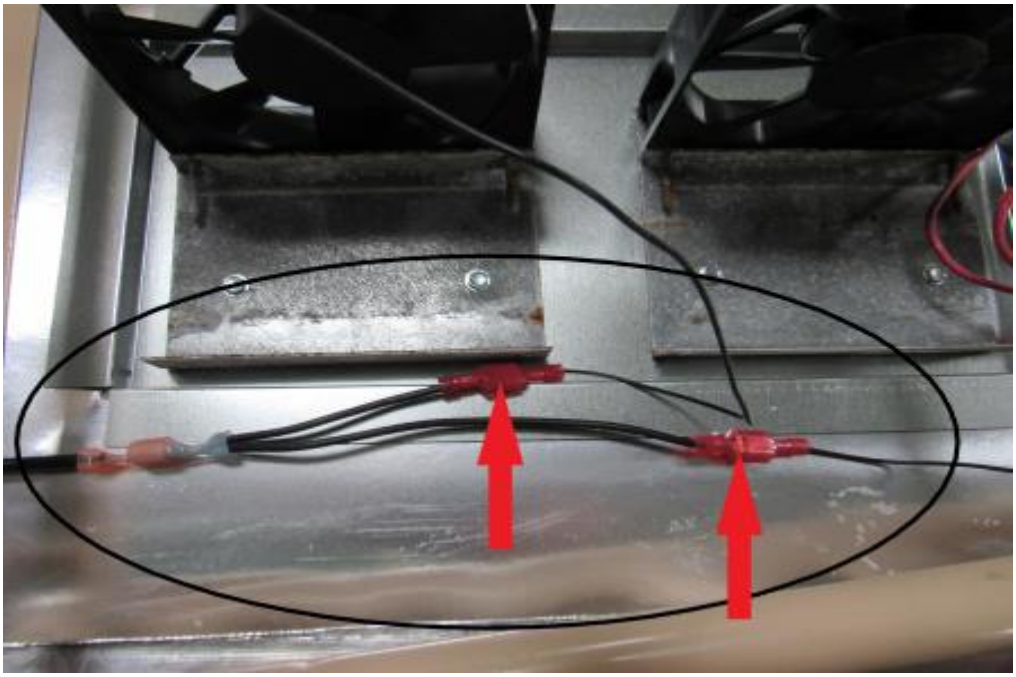




The red wire coming from the fan switch has a 3-way split. Plug the red fan wires into that as shown (RA).

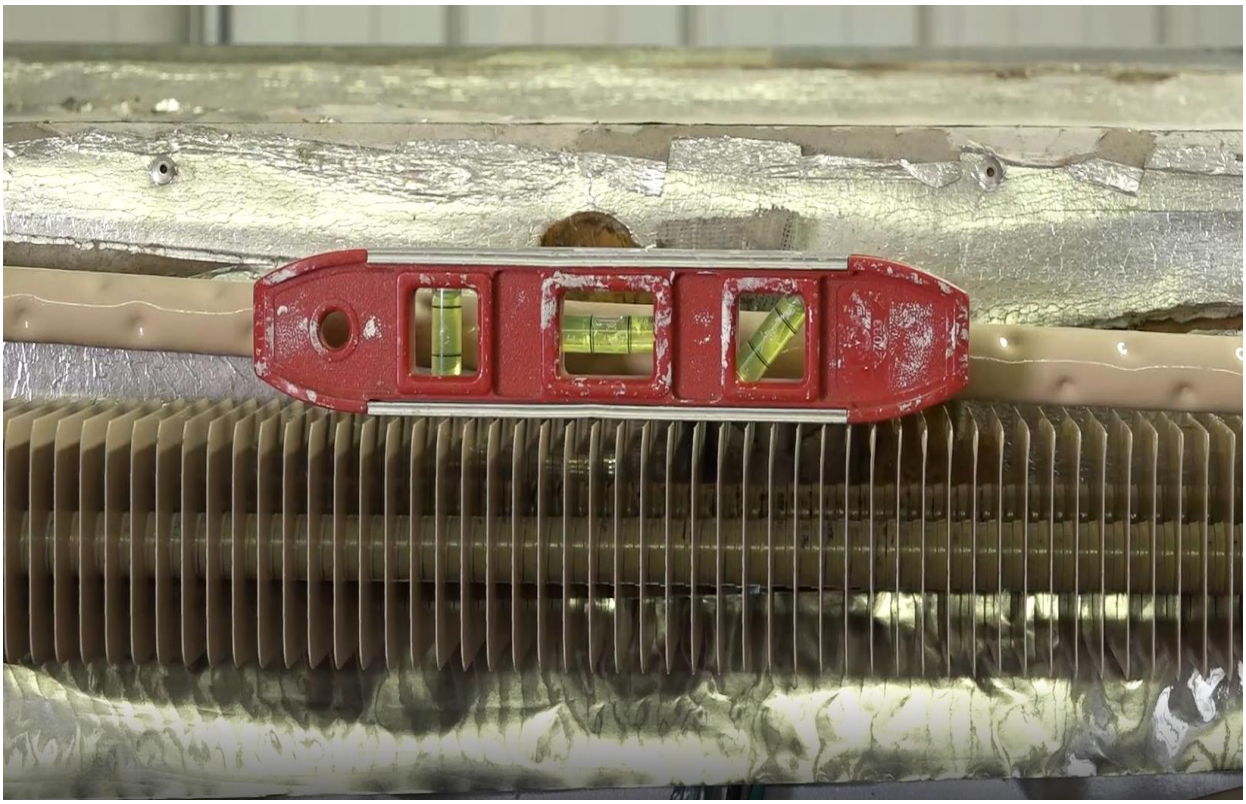


The black wire coming from the controll board that originally powered the fans gets plugged into the fan black wires as shown (RA).



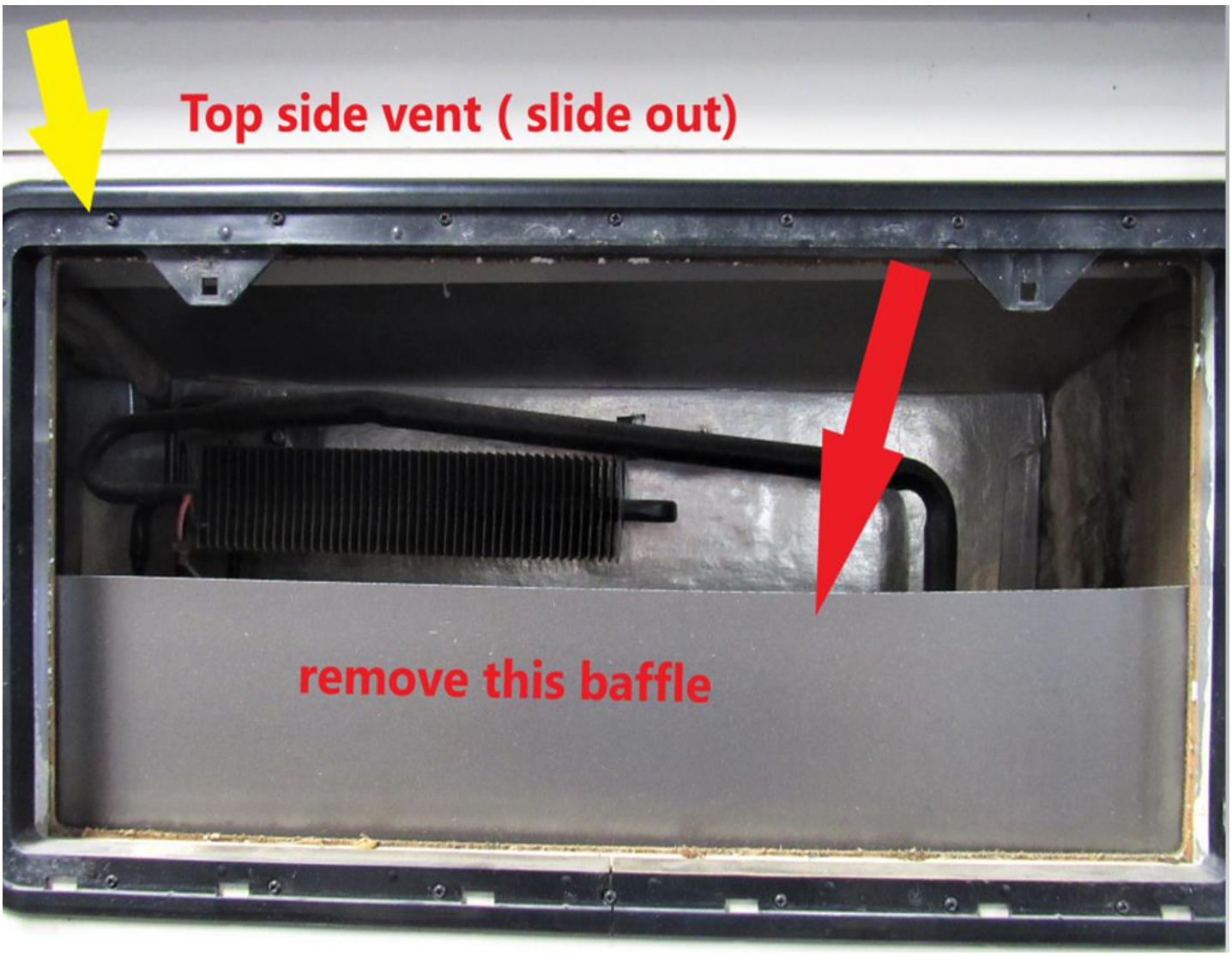
Zip tie any loose wiring, fan wires, and control board wiring

Stand the fridge back up and level the top fin with the top of the box, if its off then you will need to remove the bottom 2 mounting screws you can push the unit to the side it needs to go to make it level with the box, normally it will not take much to get it close, it does not have to be perfectly level to the box, as long as the bubble of the level is within the lines you are good. Do not remove freezer or fridge screws to move the unit as these screws need to stay tight, and pushing the unit to the side will not put extra pressure on the tubing, remember these units are made with thick steel tubing.



Warning: Please make sure and follow thru this step, otherwise unit could over heat causing damage to the unit.

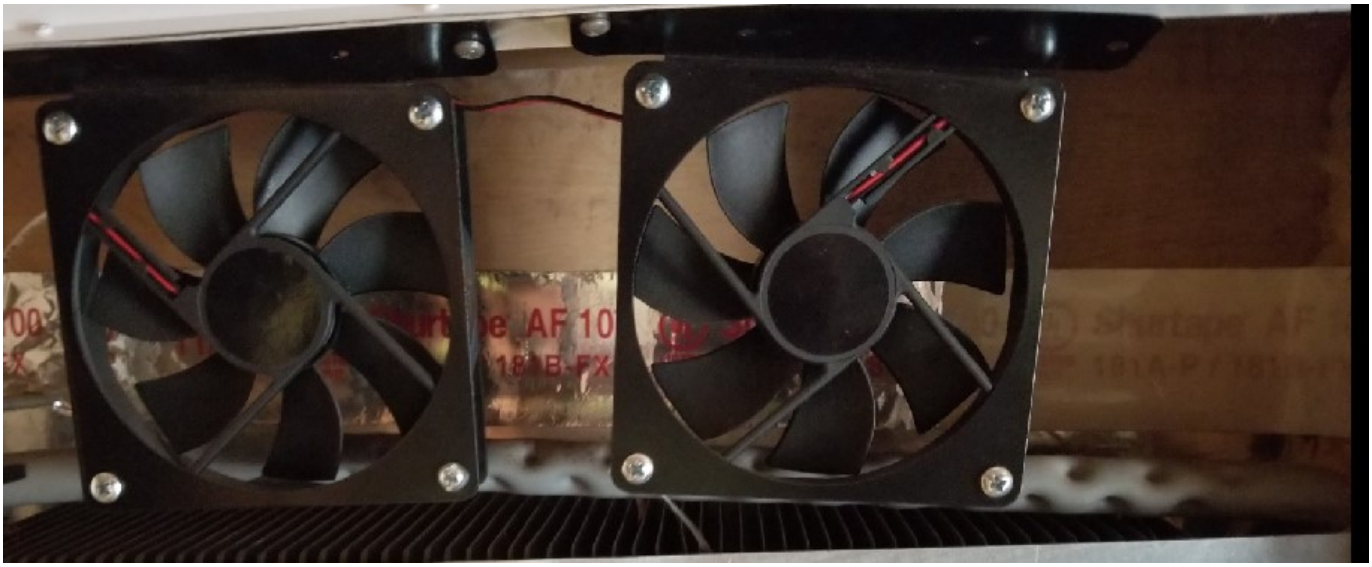
Before installing the fridge back into the cavity, check to make sure wall insulation is secured and this is a good time to sweep or vacuum any loose debris. If this fridge is installed into a slide out then make sure and remove the top side vent (YA) baffling (RA), as you will no longer need this and all it will do is slow air flow. If Its installed into a roof vent style then nothing has to be changed.



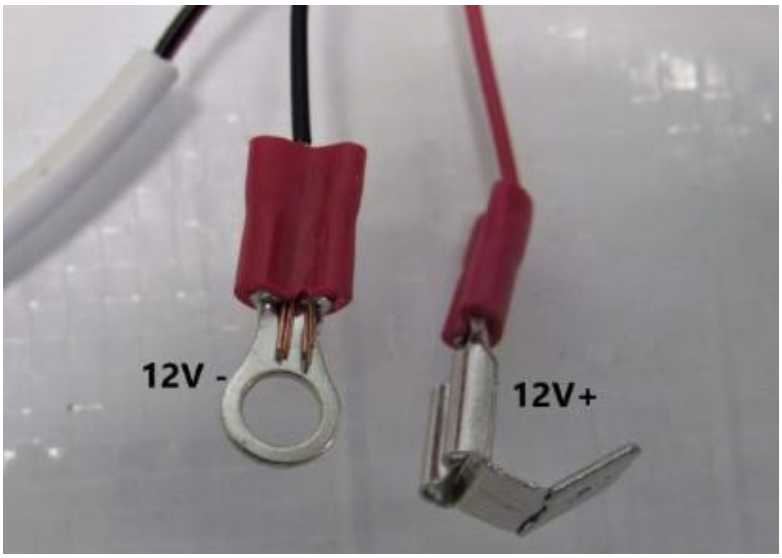
It needs to look like this to start before fans added, wide open vent



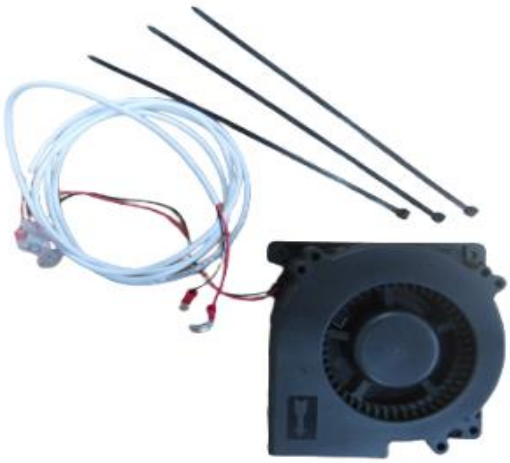
You will then be required to add a slideout fan to your top side vent to force the hot air trap above the condenser to blow out the side vent, (this is required on all slide out models to be covered in our warranty). Below is example of a added fan kit



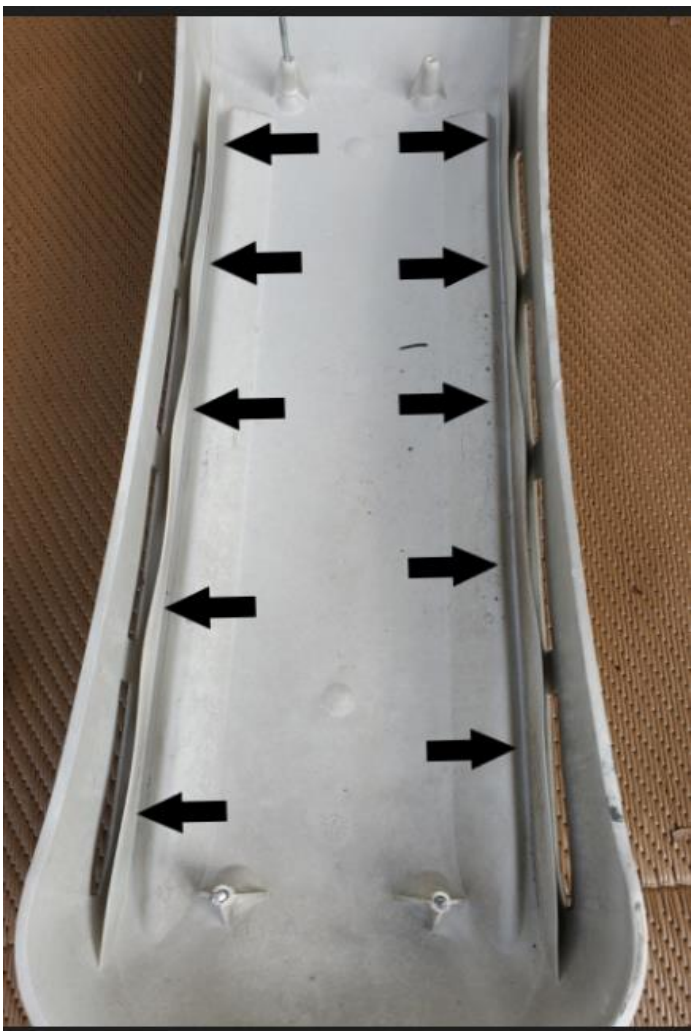
The eyelet can be screwed at any ground, connect female + to the fan switch wire, so it comes on when the lower fans come on

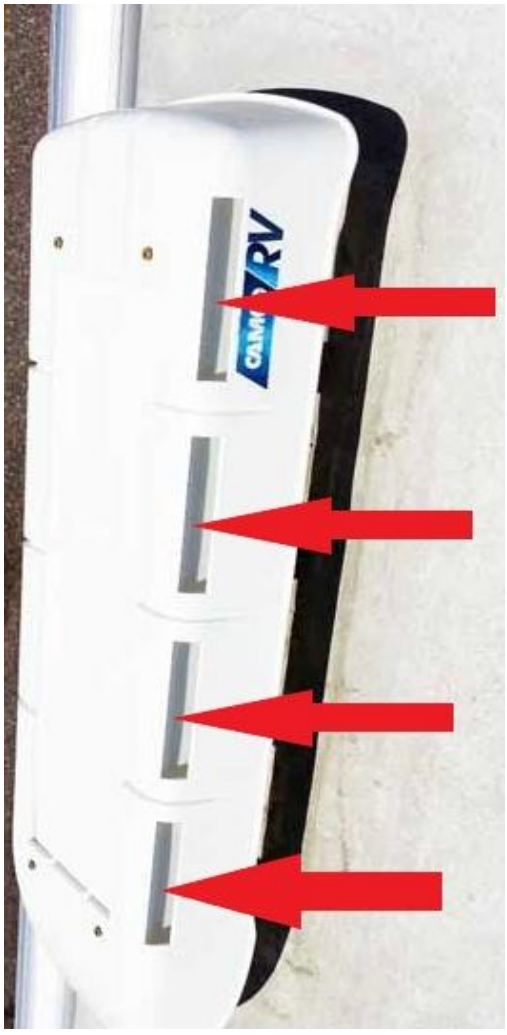


This does not have to be our fan, but a fan has to be added to the top vent.



If It's installed into a roof vent style, then it's a good idea to remove the top cap once done to remove any debris or just to make sure its wide open. Also check the top cap rain guards (BA), these can swell out with time and heat and cause serious air flow restriction, you can cut off ½" of these rain guards to give more air flow if they are restricted. If your cap is a aftermarket "Camco" cap then the rain guards have to be cut completely off as these caps are not made for your fridge vent.





Now you're ready to slide the refrigerator back into the cavity. Once it's started it helps to have someone outside to watch as you slowly push the fridge back into place, making sure the gas line is out of the way.

Install mounting screws (RA)on the top and bottom first before finishing outside.

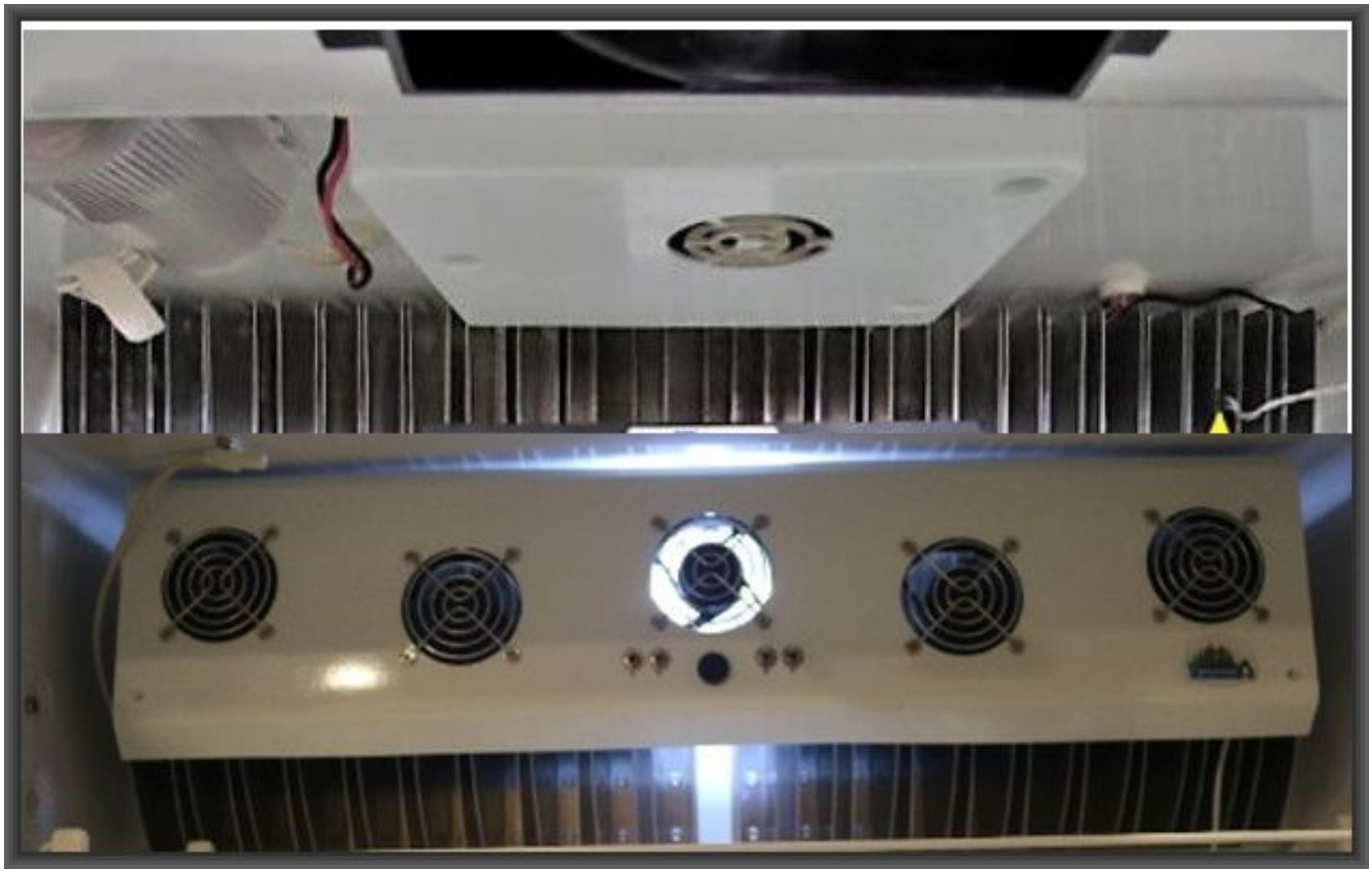




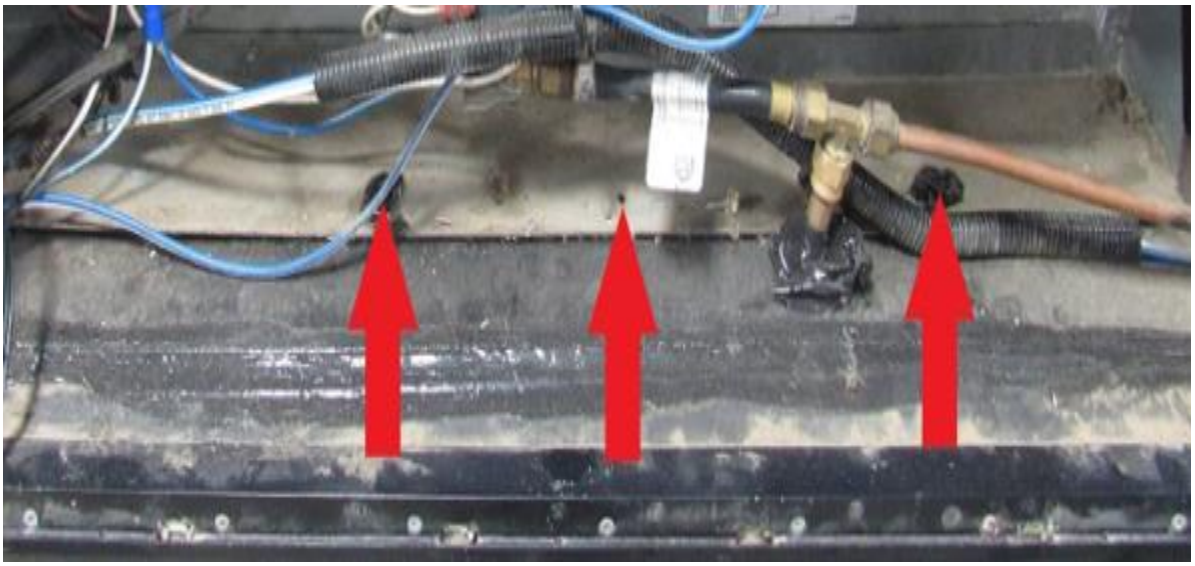
Attach black trim pieces on top and bottom.



Clip the thermistor onto the right-hand side of the fin, this placement is not so crucial as long as its towards the right and close to center up and down. Our Frost Guard Fin fan can be attached centered on the fins if it was added.

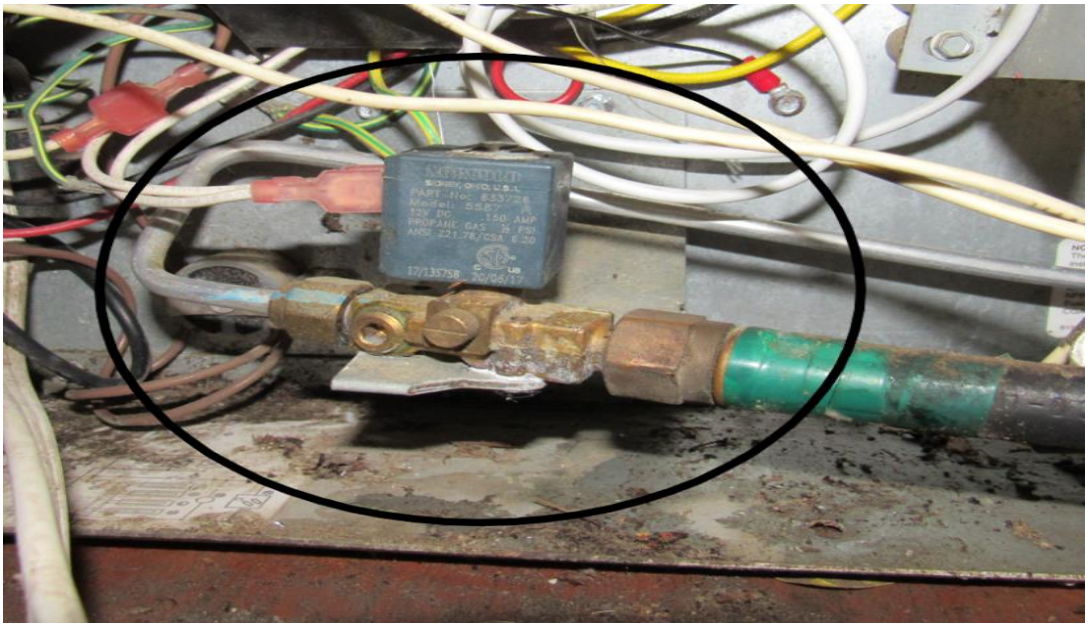


Now we are ready to finish the outside. Put your rear mounting screws back in



WARNING: Make sure this step is properly followed and leak checked so you don't have a gas leak.

Connect the LP gas line to the LP solenoid, turn on the LP at the tank and leak check with soap and water. <u>MAKE SURE YOU DO NOT HAVE A LEAK</u> before continuing.



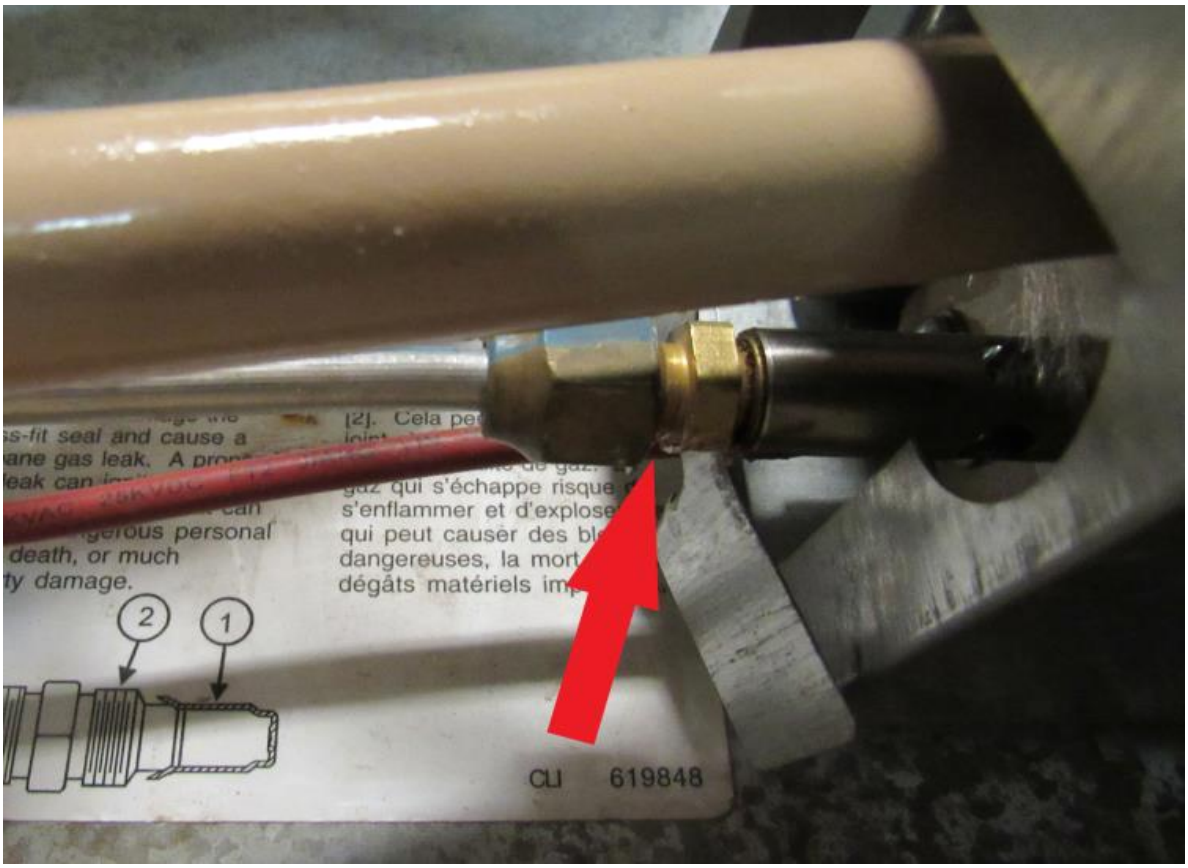
Plug the 12V DC wires from your coach back into the board as before, Negative is on the left (YA) and Positive is on the right (RA). The color of these wires are black and white on this pic but these will vary from coach to coach, just make sure you know which is positive and negative before plugging it into the board.



Go to the inside of your RV and turn your refrigerator control "ON" now push the mode button and set it onto LP mode. After a few seconds your fridge LP Burner should light up and run, if it tries to start and doesn't, restart it again, it might take a couple tries to purge the air out of the gas line



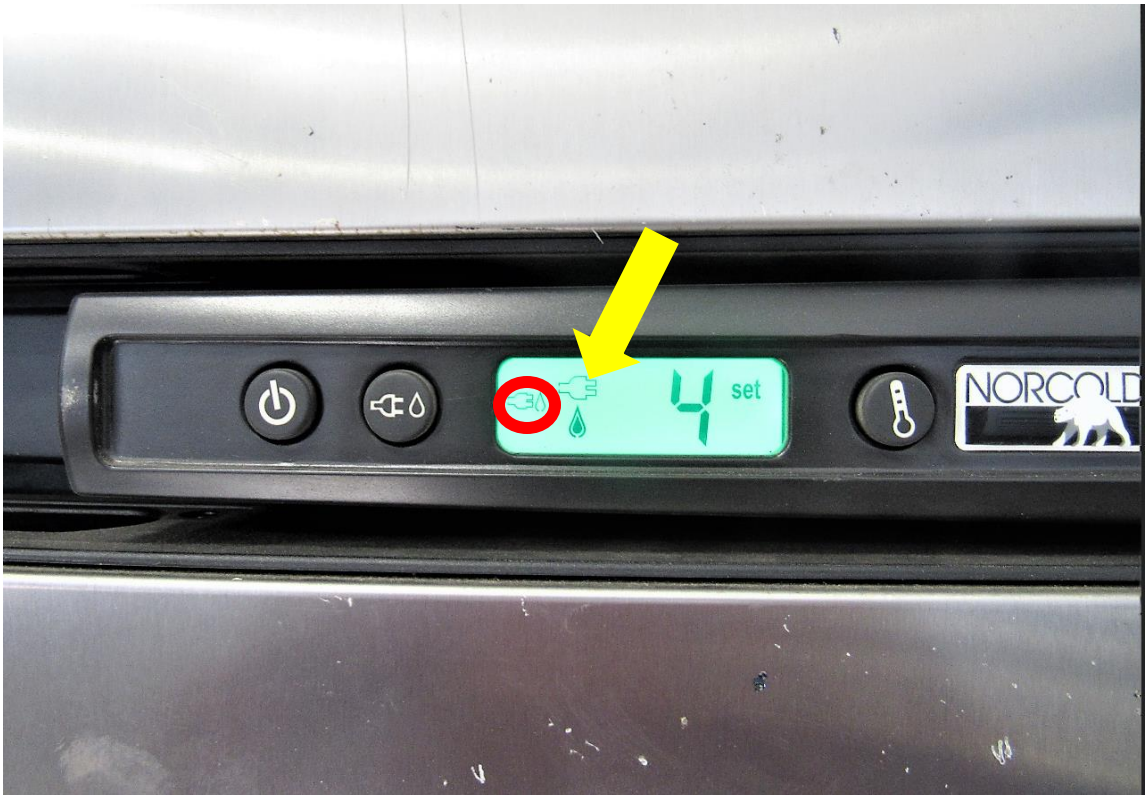
Go back outside to the back and recheck the gas hookup and you will need to check the LP burner connection to the gas line for leaks. (RA)



Once you are assured no leaks are present, plug your 120V Elect cord back into the wall socket. If you want to test this mode, make sure 120V is present to this outlet.

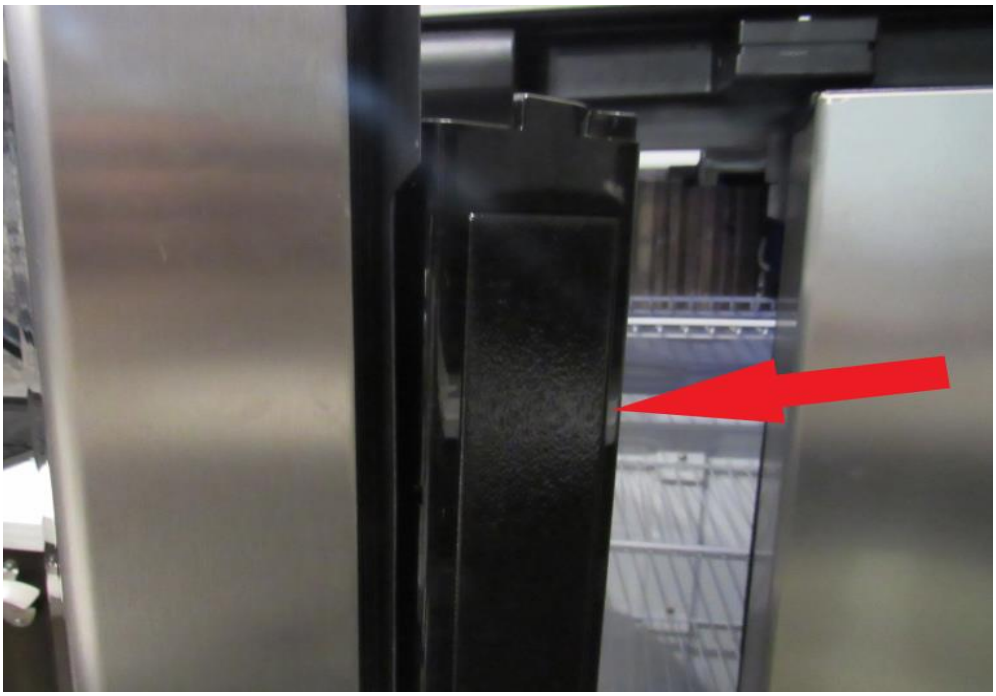


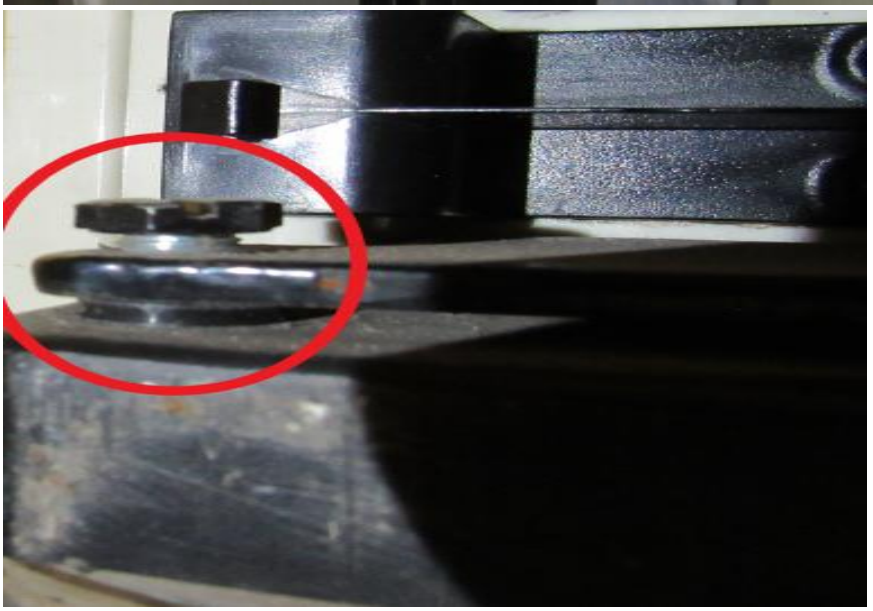
Go back inside and turn to your eyebrow board to “auto” mode (should light up) (RC) after 5 seconds it should switch to AC which is the cord symbol. (YA) You can now adjust your temp setting to your desired temp, we recommend setting it onto 4 and then after approx. 24hrs adjust up or down to your desired temp inside the fridge. A thing to remember is food zone is 38F to 42F, and in the freezer 0F to 10F. If you have it much colder then 38F your ice on the fin will accumulate very fast.



If you have a amp clamp the total amps between the 2 heaters should be 3.6A to 3.8A. After its been running for ½ to 1 hr you need to make sure you hear the rear vent fans turn on. Which can be heard either thru the front fridge door or thru the rear side vent

Check your left-hand door flapper, this can get shifted in this new unit installation process and may need to be readjusted. There normally are 2 or 3 pivot points that should be lubricated with silicone or WD-40, and make sure it swings freely by hand, with the right-hand door open watch as you slowly close the left-hand door, this flapper should freely snap shut all the way closed. If it drags on the top you need to take out the top hinge pin and take out the lift washer out of the bottom hinge pin, if it drags on the bottom you need to add a small washer to lift the door slightly.





We highly recommend using a digital wireless thermometer to monitor your inside fridge temps, many phone calls or temp misleading's can be avoided by making sure the thermometers you are using are accurate, you do not have to use our brand but we do recommend using something like this type.

https://jc-refrigeration.com/product/refrigerator-freezer-digital-wireless-thermometer-free-shipping/

Use digital wireless



DO NOT USE



Clip fridge sensor underneath second shelf down or first shelve beneath the fin, place it center front to back and center side to side (RA), if its clipped underneath it will be out of food containers way. Same with freezer, clip underneath bottom shelves center side to side but have this one more towards the back of the freezer.





Troubleshooting

Error Codes:

"NO FLO" or "No FL": #1 LP gas is not turned on or there might be air in the line. Turn the refrigerator off, wait a few seconds, and turn refrigerator back on, #2 the igniter probe is to close or too far away from the burner tube. #3 your board has gotten wet and needs to be blown out with compressed air.

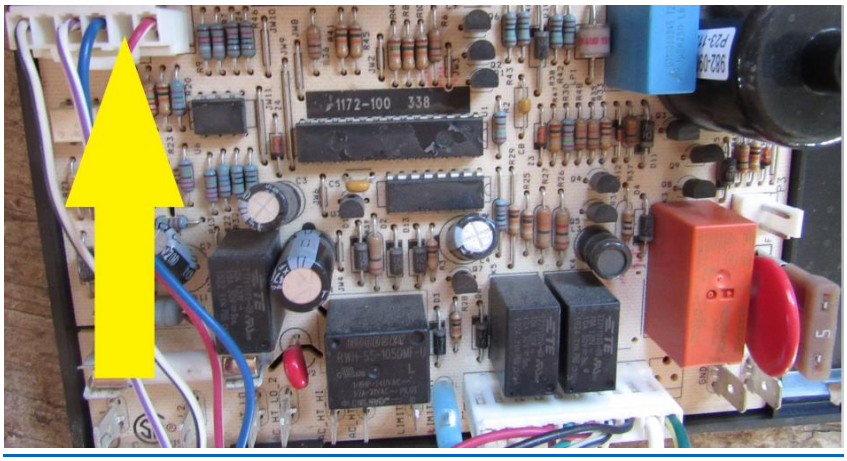
"NO CO "Code

This is a code is the fridge does not drop in temp in 4 hrs., make sure your fans are running and the cooling unit is getting warm in the back, see temp chart for temps and location.

This code will shut down the control board and a restart is needed, see diagram below how to restart

-Remove board cover and if you had to unplug any wires in order to remove the cover, plug those back in as you want everything plugged in the way it would normally be. -Take an 18ga or smaller wire and strip back both ends at least 1 ", make sure 12V power and gas valve wires are hooked up, then push one end of wire in empty slot (YA) and hold other end of wire onto a ground, either back of fridge box or ground from coach, after approx. 5 seconds you will hear a click and you can take wire back out and put cover back on as well as other wires and your fridge should function as normal again.

Resetting Control Board



“NO AC” CODE

#1 your electric plug in is not hot, check your breaker box, make sure you do not have the fridge plugged into the inverter or icemaker power outlet

Thermistor check

Push and hold the “set temp” and “mode” button in at the same time. After 5 seconds you will see a 1 or 88. Now push the “mode” and scroll up to 3, this will then flash you your thermistor temp. This temp should be 25 – 28 for normal food zone depending where it’s located on the fin, but it’s very important that the door has been closed for at least 1 hr. before doing this test. To come back out of this mode, turn fridge off and then back on again. If you want to check the accuracy of your thermistor or your thermometer inside the fridge, unclip the thermistor from the fin and leave it hang into the box for approx. 1 hour with the door closed, then do this test and the thermistor and your thermometer should match up or be close the same.

If your controls are not operating correctly or the eyebrow seems to not be working, do this to reset all codes and this will refresh both rear and front board. Push and hold the “set temp” and “mode” button in at the same time after 5 seconds you will see a 1 or 88, now push the “mode” and scroll up to 6 this will then show a “ER”, then push and hold the mode button until a “CL” shows. Let the refrigerator set like this for a least 5 minutes, then shut fridge off and turn back on and the fridge will be ready to operate again.

TEMP CHART

To do a diagnostic test on this unit we will need to know temp off of these points using a infrared temp gun:

TEMP CHART

Double coil unit



The Steam Line temperature needs to be takin at the highest point on the top tube.

We need this temperature if the unit has a top side vent where it is accessible, if the cooling unit has a roof vent, then we will do diagnostics on the unit without that reading.

Note: The Steam Line temperature location will vary between the left and right side, depending on the side of the cooling unit the boiler stack is on.

single coil unit



From here you can email us these results info@jc-refrigeration.com and we should be able to diagnose from there.

FAQs

What is covered under warranty?

Our warranty covers the cooling unit and shipping for 3 years free and labor for 90 days. An additional 3 yrs. can be bought off our website, which can be found on the warranty form attached to the unit. It does not cover any original Norcold parts such as the control board, the front display, thermistor, etc.

What if the cooling unit needs to be worked on and I'm not close to your location (Shipshewana, IN)?

Contact us first and we will try to help you get the issue resolved. Most problems can be fixed by us through email or phone but if more work, or hands on work is needed, we have a list of dealers/service centers in almost every state that have purchased cooling units from us before and could possibly help you out.

Is there any regular maintenance to perform on these cooling units?

The only thing that needs to be done on these cooling units is to take compressed air and blow any dust or debris out of the burner assembly. This can be done maybe once or twice per year.

What makes our unit better than the original: We use much thicker tubing for one and our boilers are all hand welded which will prevent stress cracks (leakers) and we attach another coil which makes it double cooling capacity.

What is the best method to reach us for questions or concerns: email will be the fastest responds, a phone call without pictures of what you have will most times only delay the proper answer to your question. Emailing us a picture with the question will get you the fastest answer info@jc-refrigeration.com

How long have you been manufacturing these: we started servicing in 1991 and manufacturing in 1994

Is it true that these should be perfectly level: Yes, these can be off by 3 deg max in order to work, if they get off level more than 3 deg they will shut down and the boiler will create damage very quickly by over heat. This is a gravity flow system, so while travelling it's not a problem and it will slosh enough to keep going, it's while parked that it has to be level.